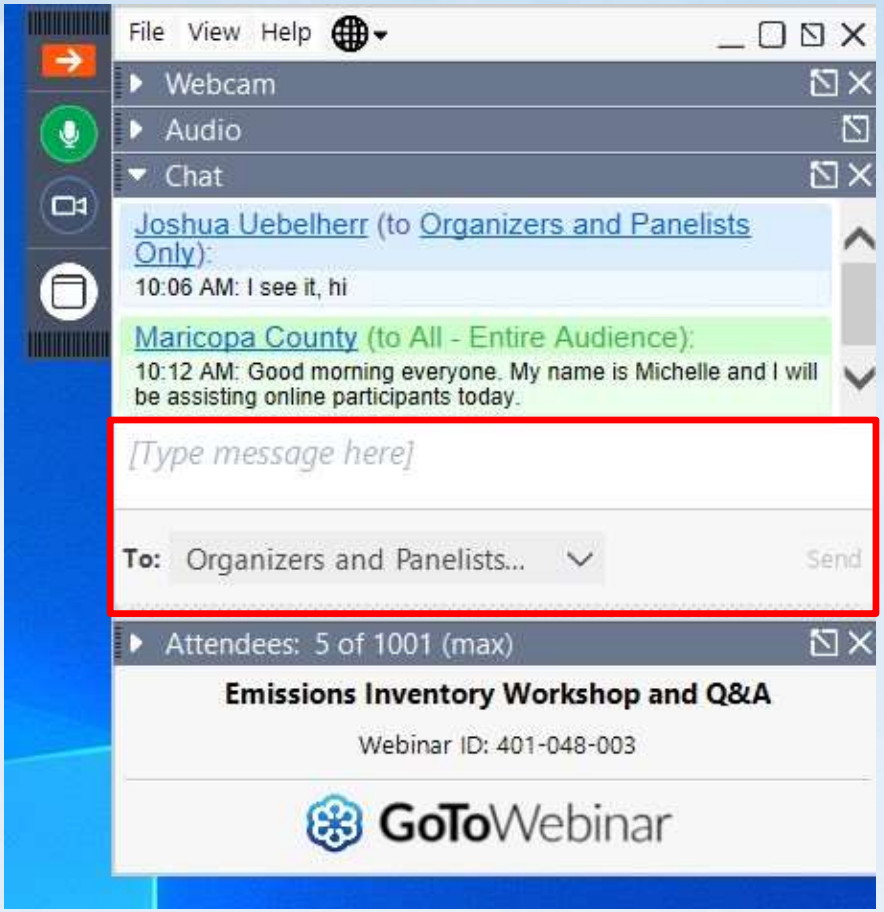
Reporting 2021 Emissions

Joshua Uebelherr, Senior Planner

January 25, 2021

Webinar Info

- All calls are muted to prevent background noise.
- If you have questions for the presenter, type your questions in the chat box in the lower right-hand corner of the Go to Meeting control panel.
- We will answer questions as we go through the presentation.



Maricopa County AIR QUALITY DEPARTMENT

Mission

To improve the air of Maricopa County, so customers, residents, and visitors can live, work, and play in a healthy environment.

Maricopa County
AIR QUALITY
DEPARTMENT

Agenda

- General information
- What's new?
- What to report
- Calculation methods
- Confidential data
- What not to report
- How to report
- Questions

Maricopa County
AIR QUALITY
DEPARTMENT

What is an emissions inventory (EI)?

- A submission by a permitted facility that:
  - Lists all processes emitting reportable air pollutants, and
  - Provides details about each of those processes.
- Submitting the emissions inventory is required as a condition of your Maricopa County Air Quality Permit.
- A separate emissions inventory is required for each business location with its own air quality permit.

Maricopa County AIR QUALITY DEPARTMENT

How are EIs used?

- Clean Air Act requirements for State Implementation Plans (SIPs)
- National Ambient Air Quality Standards (NAAQS) attainment
- Determining compliance with regulations and permit conditions
- Identifying sources and general emission levels, patterns, and trends to develop control strategies and new regulations
- Emission Reduction Credit (ERC) Program

Maricopa County AIR QUALITY DEPARTMENT

Emission Reduction Credits

- Credits are generated when a facility reduces emissions beyond what is required by their permit and applicable rules.
- Credits can be generated by:
  - Installing emission control systems
  - Replacing equipment
  - Changing fuels
  - Closing a facility
- maricopa.gov/4562

Maricopa County AIR QUALITY DEPARTMENT

What's New for 2021?

- Annual Emission Fees
  - Title V sources: $47.50 per ton
  - No fees for Non-Title V sources
- Online Reporting using the AQD Online Portal (IMPACT)
  - Emissions inventories
  - Facility inventory and contact changes
  - Permit applications and forms
  - Compliance reports
  - Performance test protocols
  - Asbestos notifications

Maricopa County AIR QUALITY DEPARTMENT

AQD Online Portal Resources

- maricopa.gov/1820
  - Electronic signature instructions
  - Permit application instructions
  - Compliance report instructions
  - Performance testing instructions
- maricopa.gov/5628
  - Emissions inventory instructions
  - Process specific help sheets
  - Material usage calculation tool
  - Emissions inventory demonstration

Maricopa County AIR QUALITY DEPARTMENT

Helpful Hints

- Chrome is the recommended browser.

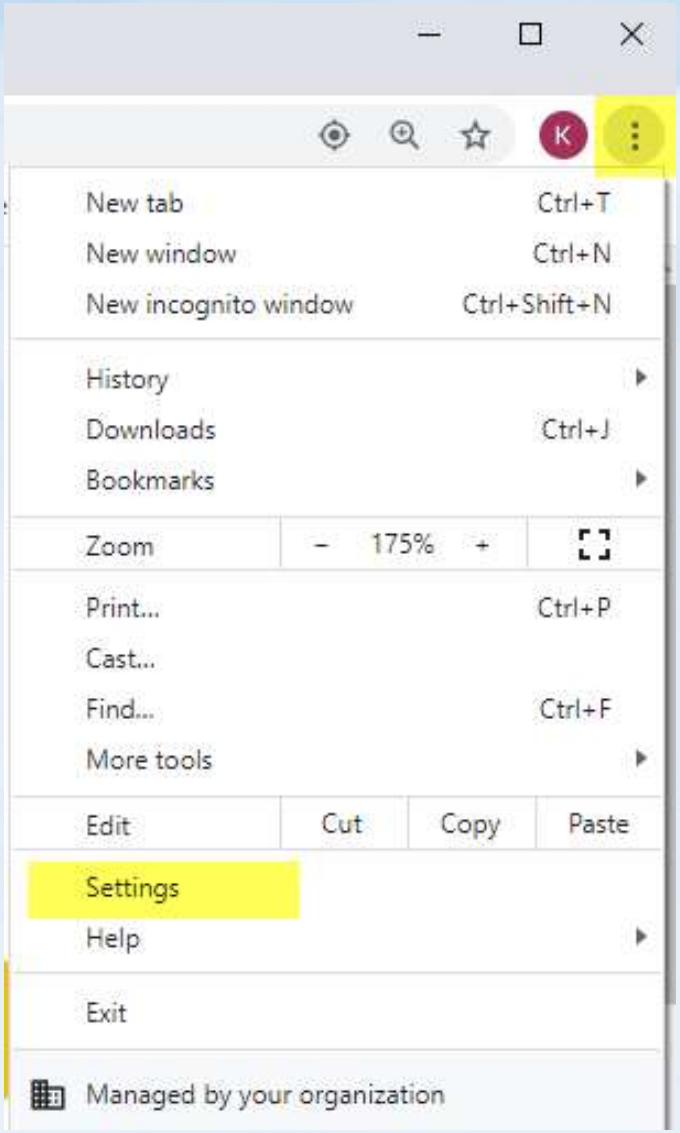
- Do not use the back and forward buttons.

- Click “Save” on each screen.

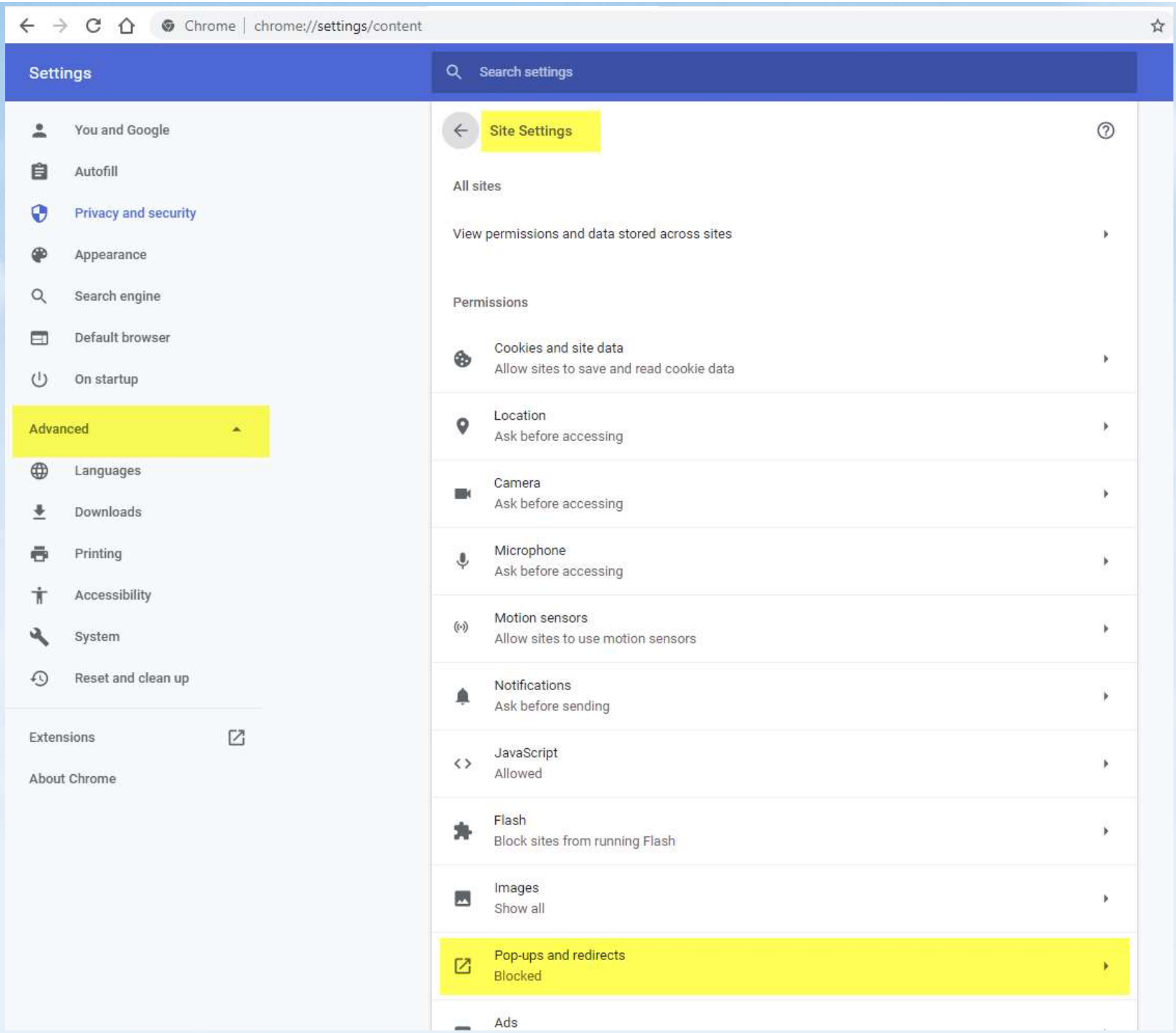
Maricopa County
AIR QUALITY
DEPARTMENT

Helpful Hints

- Enable popups.

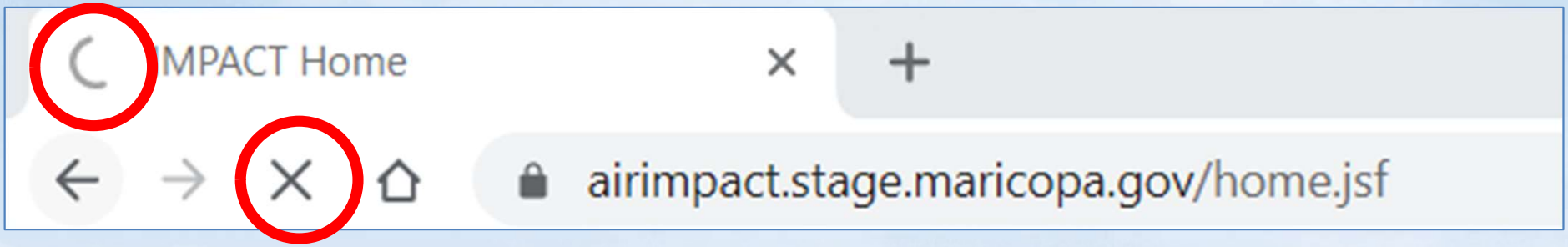


Maricopa County AIR QUALITY DEPARTMENT

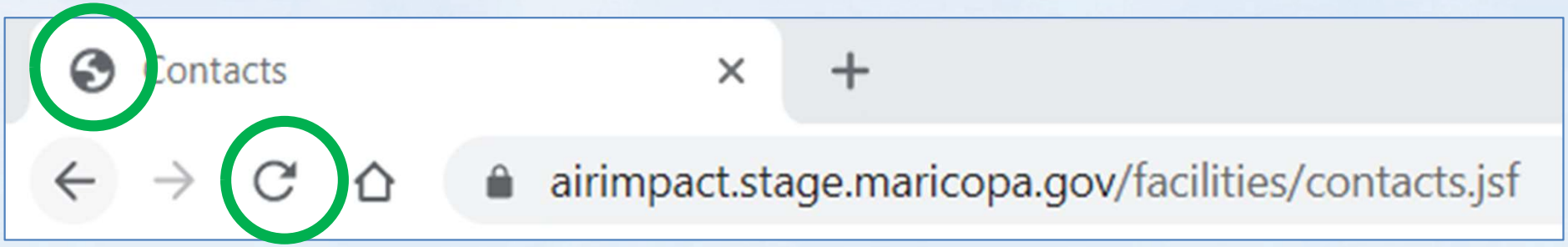

Chrome | chrome://settings/content
Settings
Search settings
You and Google
Autofill
Privacy and security
Appearance
Search engine
Default browser
On startup
Advanced
Languages
Downloads
Printing
Accessibility
System
Reset and clean up
Extensions
About Chrome
Site Settings
All sites
View permissions and data stored across sites
Permissions
Cookies and site data
Allow sites to save and read cookie data
Location
Ask before accessing
Camera
Ask before accessing
Microphone
Ask before accessing
Motion sensors
Allow sites to use motion sensors
Notifications
Ask before sending
JavaScript
Allowed
Flash
Block sites from running Flash
Images
Show all
Pop-ups and redirects
Blocked
Ads

Helpful Hints

- Loading - do not click anything:

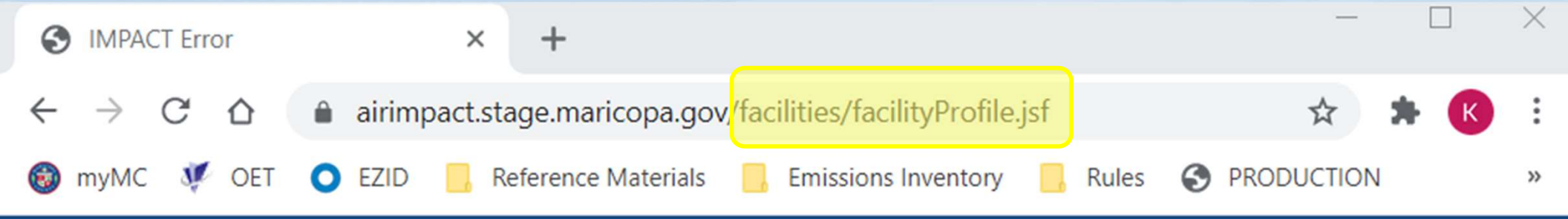


- Ready



Maricopa County
AIR QUALITY
DEPARTMENT

Helpful Hints



Maricopa County AIR QUALITY DEPARTMENT

AQD Online Portal Access

- Create an Shared CROMERR Services (SCS) Electronic Signature.
  - Consultants must submit a registration form first.
- No Sharing Allowed!
  - Each person who will access the AQD Online Portal must have their own SCS Signature.
    - This is required by federal law.
    - Shared signatures will be deactivated by EPA.

Maricopa County AIR QUALITY DEPARTMENT

SCS Account Types

- Preparers and Certifiers
  - Can create, prepare, and validate emissions inventories, applications, and compliance reports
  - Note: Preparers cannot sign or submit anything.
- Certifiers
  - Can update facility contacts and facility inventories
  - Can sign and submit emissions inventories, applications, and compliance reports
  - Each facility must have at least one certifier.
  - Consultants cannot be certifiers.

Maricopa County AIR QUALITY DEPARTMENT

SCS Account Process

- Register with SCS
  - SCS account owner – always a person
  - Company – the account owner's employer
- Verify email address
- Identity verification
  - Online with Lexis Nexis; or
  - Notarized paper form provided to MCAQD
- MCAQD links account in the database

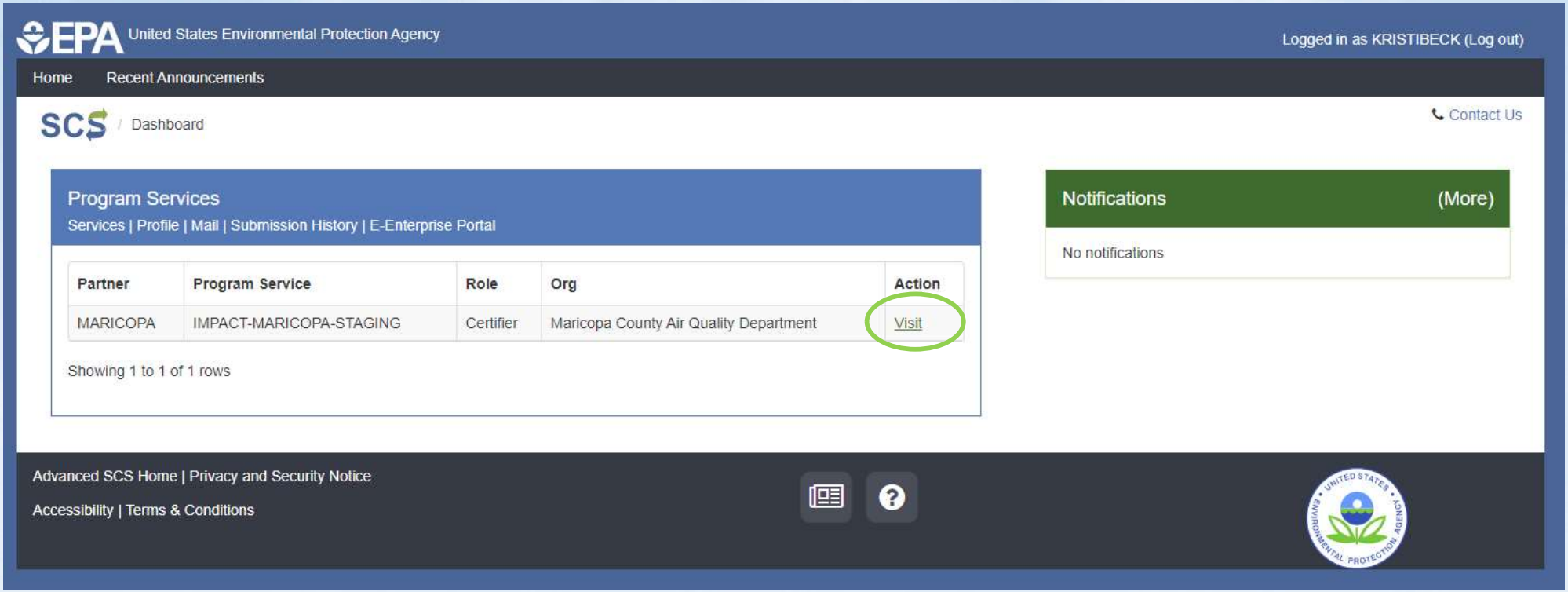
Maricopa County
AIR QUALITY
DEPARTMENT

Questions

Maricopa County
AIR QUALITY
DEPARTMENT

SCS Dashboard

- https://encromerr.epa.gov/



Maricopa County AIR QUALITY DEPARTMENT

Facility Selection

Account Information

Name: kristibeck **Company Name:** Maricopa County Air Quality Department
CROMERR Company Id: 144430 **Access:** Certifier

Choose Facility

To manage a facility, select its Facility ID from the following list of authorized facilities. To return to the facility selector from another page, press the Facility Selector link in the top right corner.

Facility ID	Facility Name	Operating	Facility Class	Facility Type	County	Lat/Long
F000204	Tom's Bird Rescue	Operating	Minor	Plastics, Polymers, Fiberglass, Foam	Maricopa	33.44859/-112.15594
F006625	AQD Title V Facility	Operating	Title V	Wood Furniture Manufacture	Maricopa	33.49204/-112.07419
F006626	Tardis Engines Inc	Operating	Title V	Bakery	Maricopa	33.49204/-112.07419

Printable view | Export to excel

Facility Creation Requests

Request ID	Facility Name	Memo	Requester			Operating	Facility Type	County	Date Submitted	Request State
			Last Name	First Name	CROMERR Username					

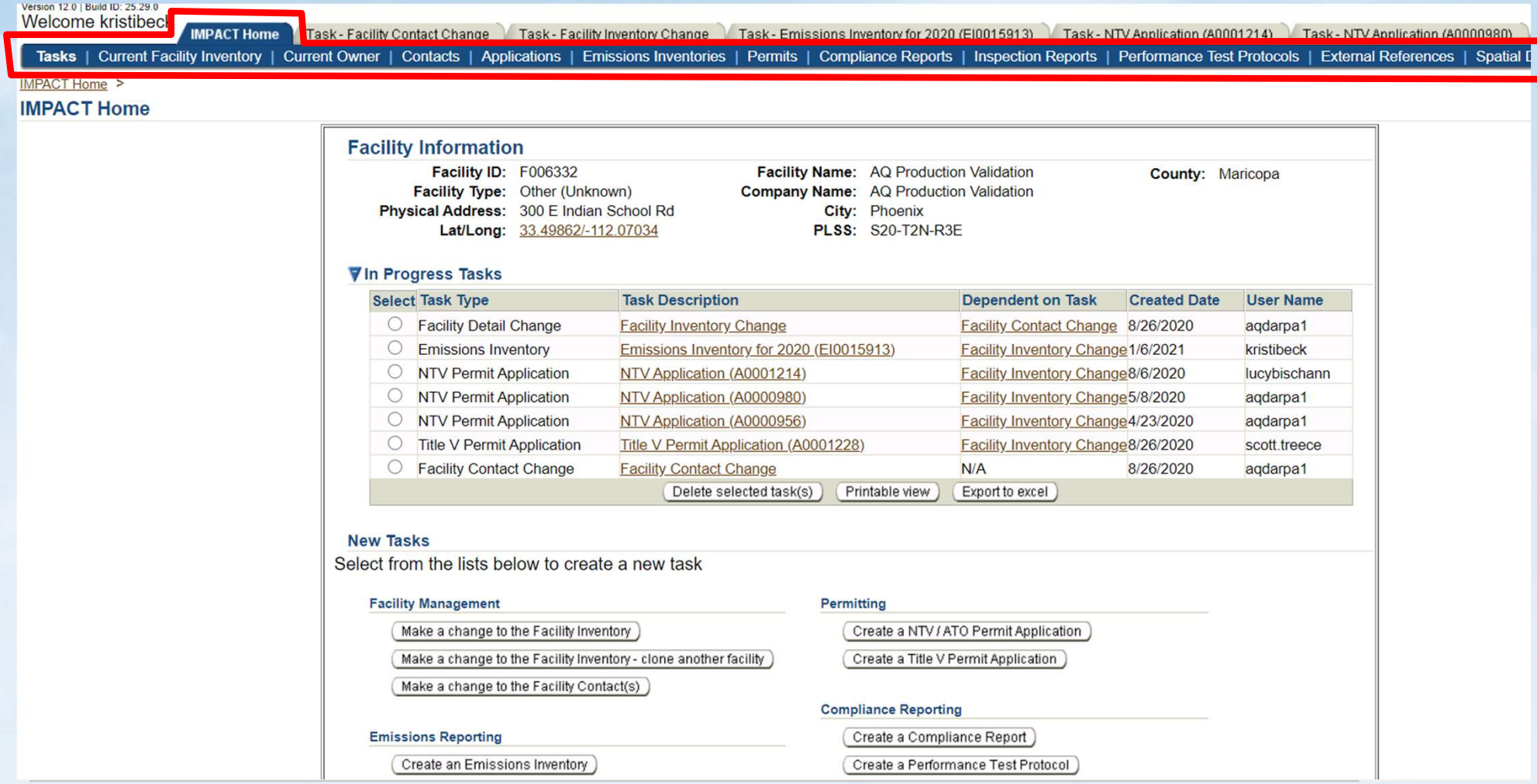
Printable view | Export to excel

Request creation of a new facility

Show Offset Tracking Information

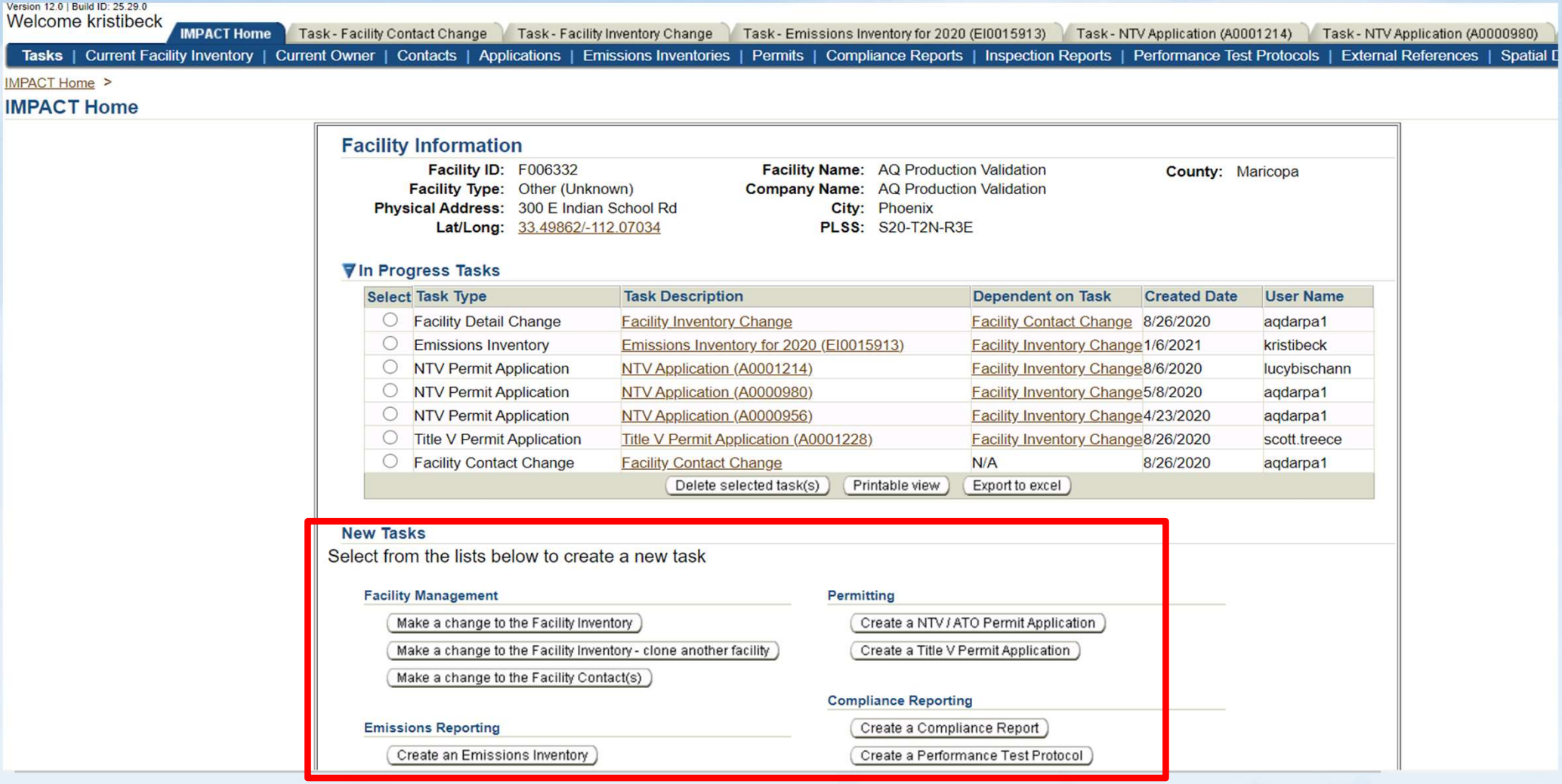
Maricopa County AIR QUALITY DEPARTMENT

IMPACT Home



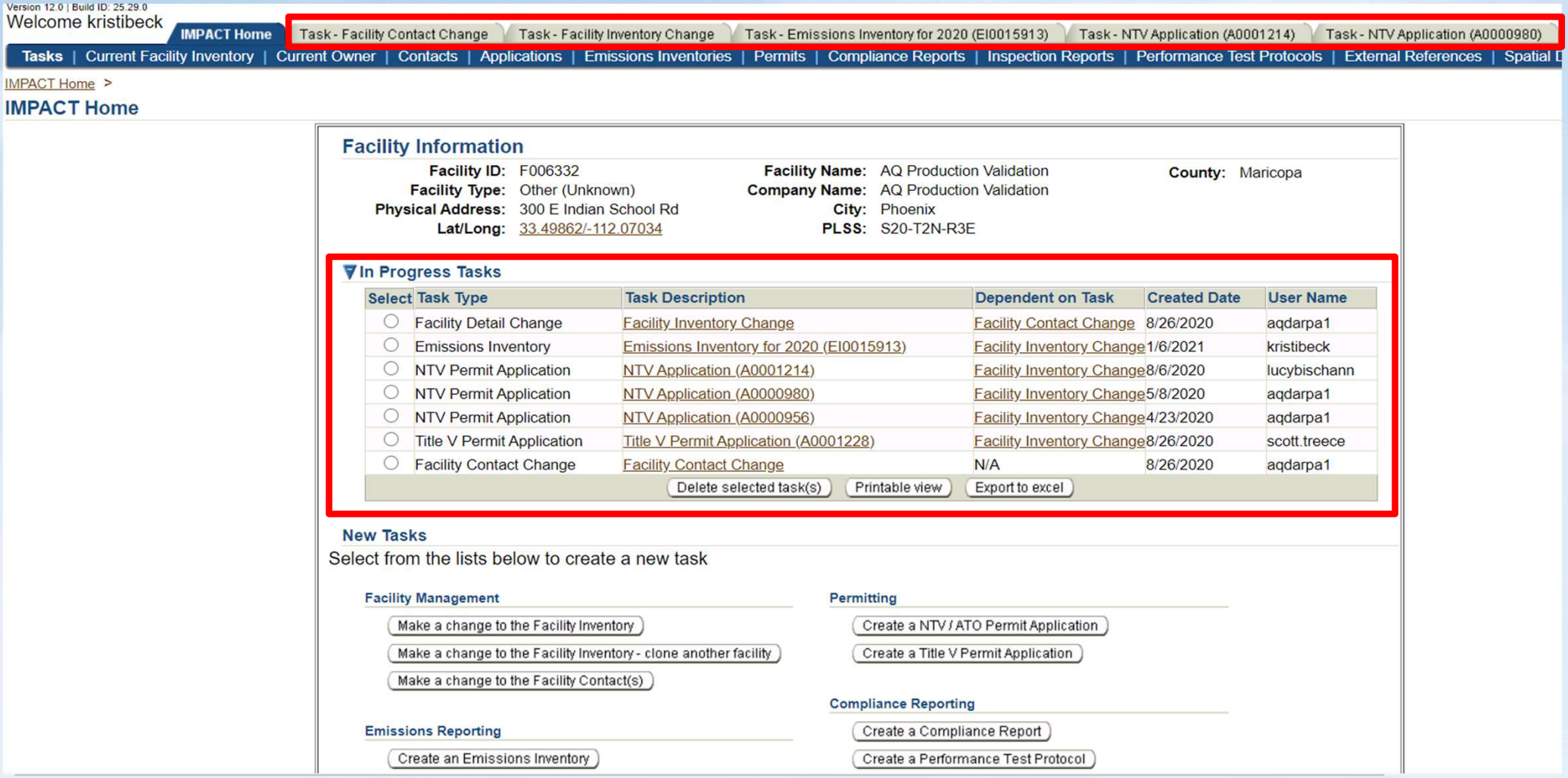
Maricopa County AIR QUALITY DEPARTMENT

IMPACT Home



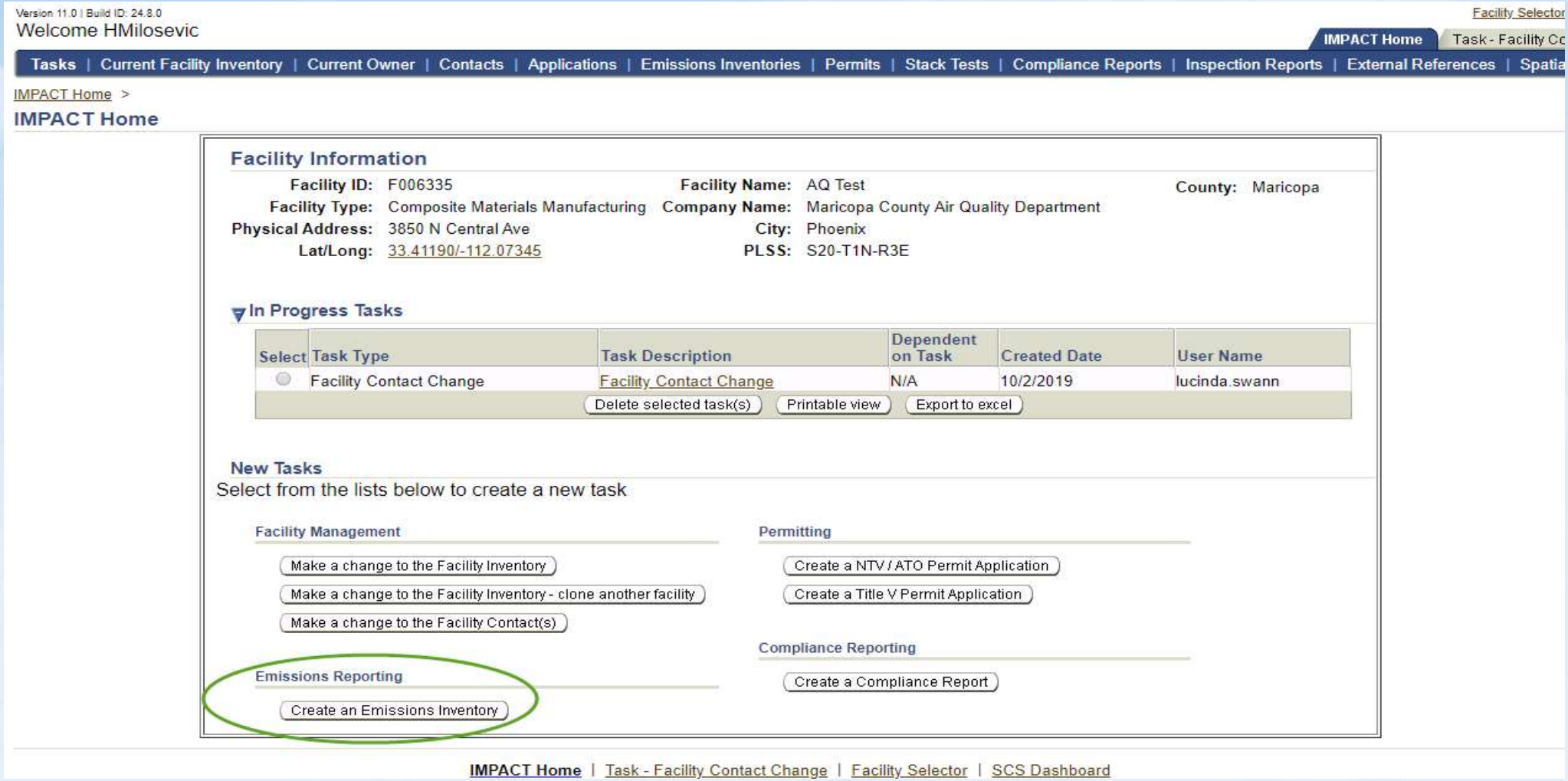
Maricopa County AIR QUALITY DEPARTMENT

IMPACT Home



Maricopa County AIR QUALITY DEPARTMENT

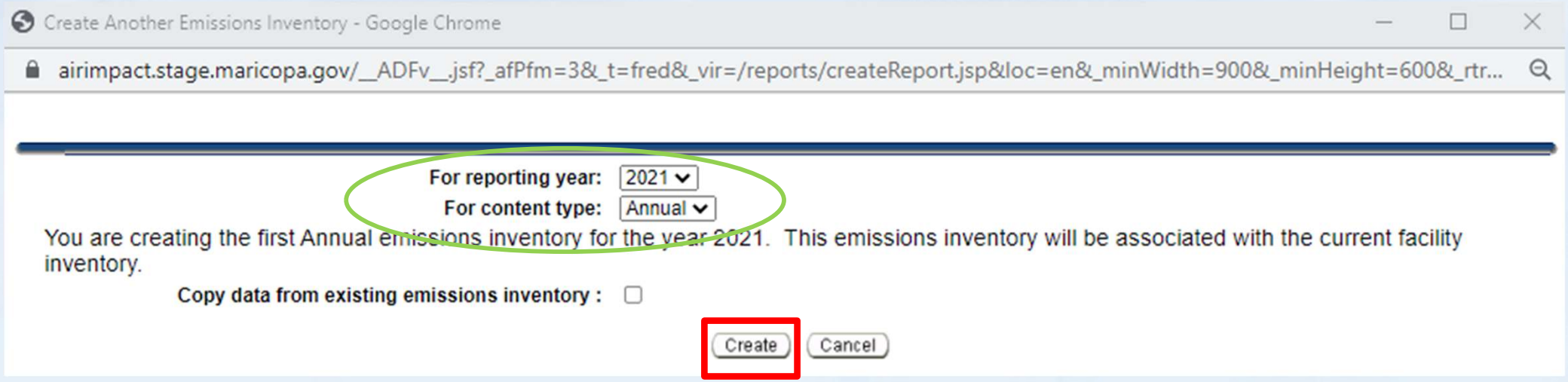
Create an Emissions Inventory



Maricopa County AIR QUALITY DEPARTMENT

Create an Emissions Inventory

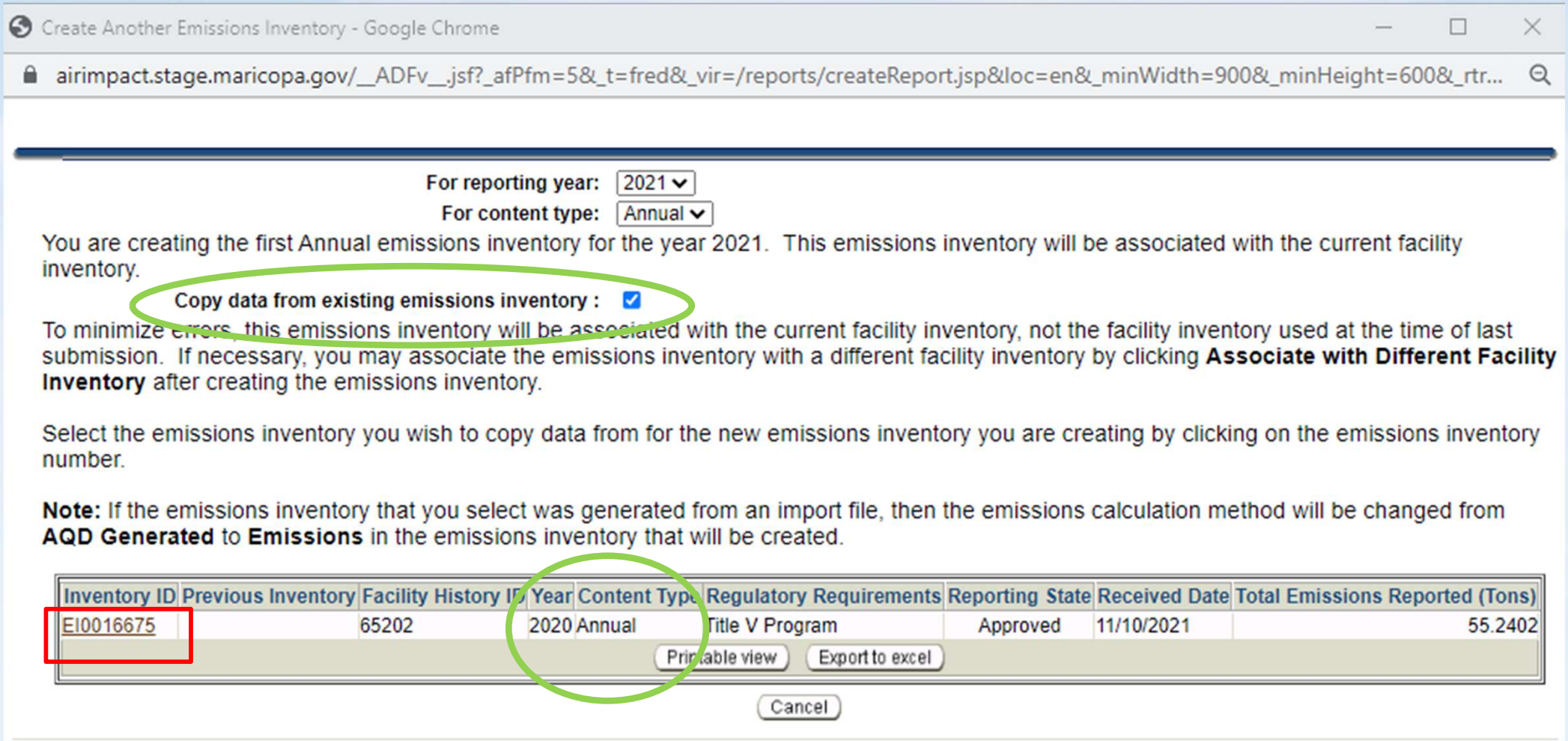
- Reporting year – 2021
- Content type – Annual
- Facilities that did not report 2020 emissions
  - Click create



Maricopa County AIR QUALITY DEPARTMENT

Create an Emissions Inventory

You may copy data for a facility with an approved 2020 emissions inventory.

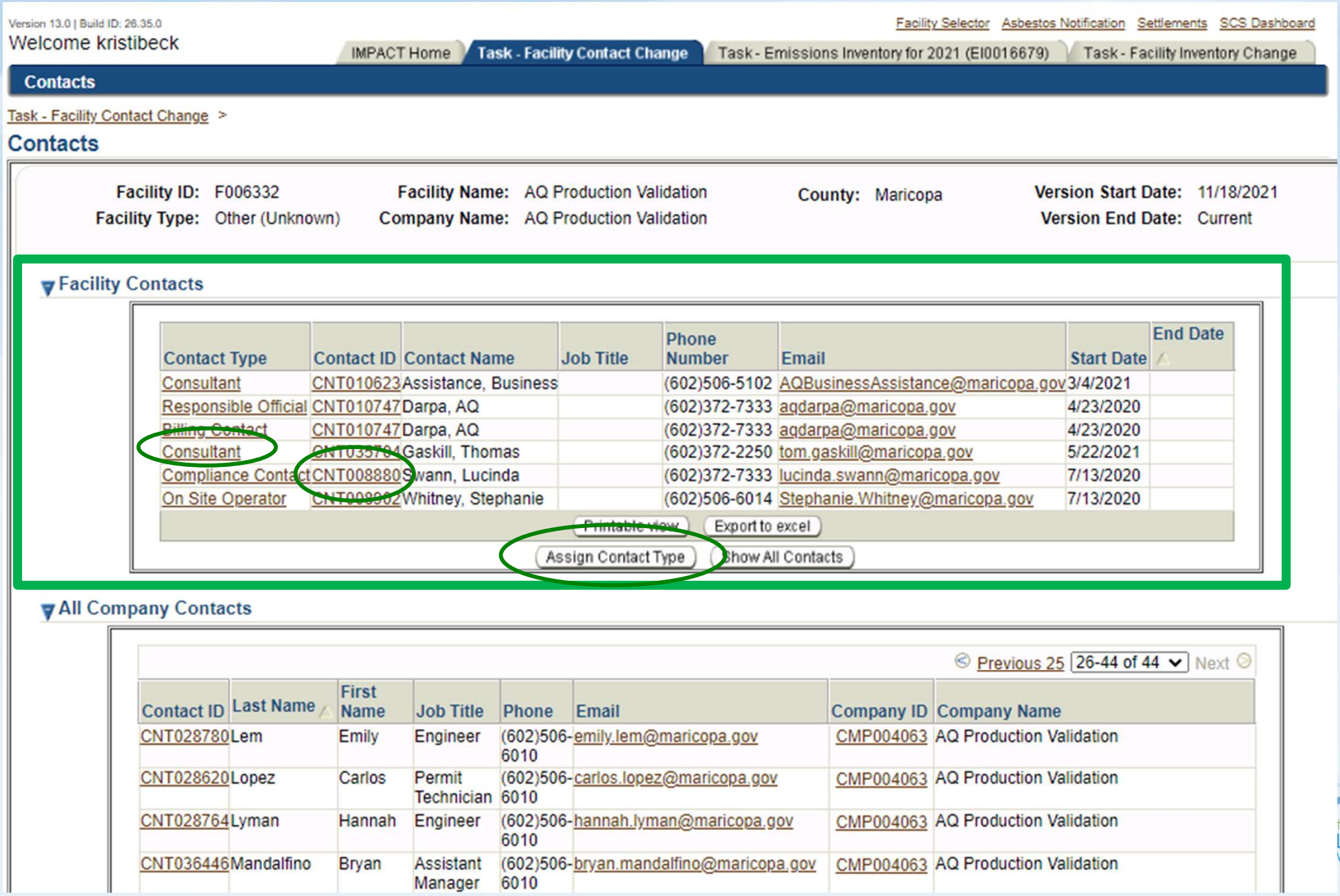


Task 1

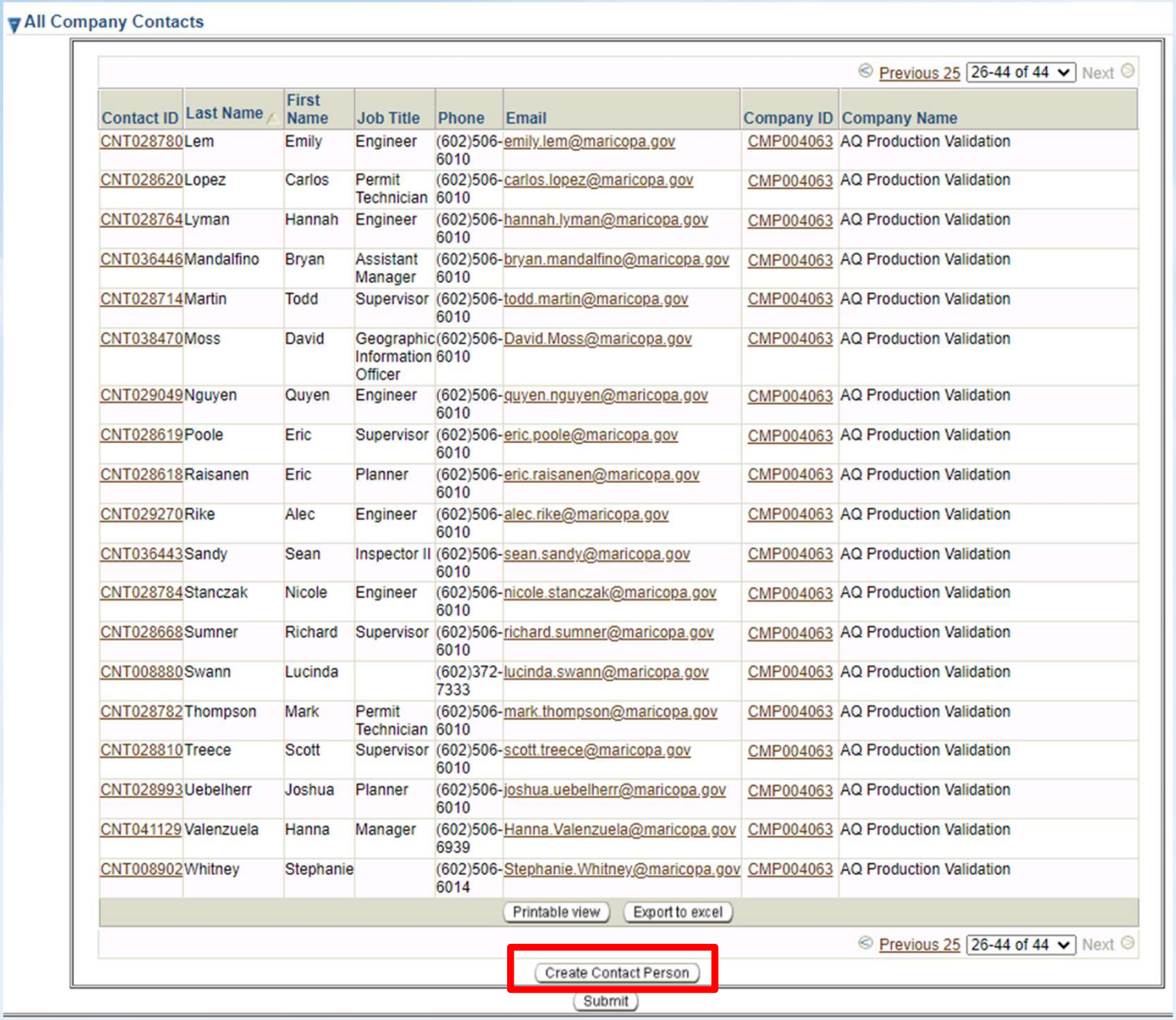
- Facility Contact Change
- Review
- Update as necessary
- Validate changes
- Do not submit changes yet!

Maricopa County AIR QUALITY DEPARTMENT

Update Facility Contacts



Add New Contacts



Maricopa County AIR QUALITY DEPARTMENT

Questions

Maricopa County
AIR QUALITY
DEPARTMENT

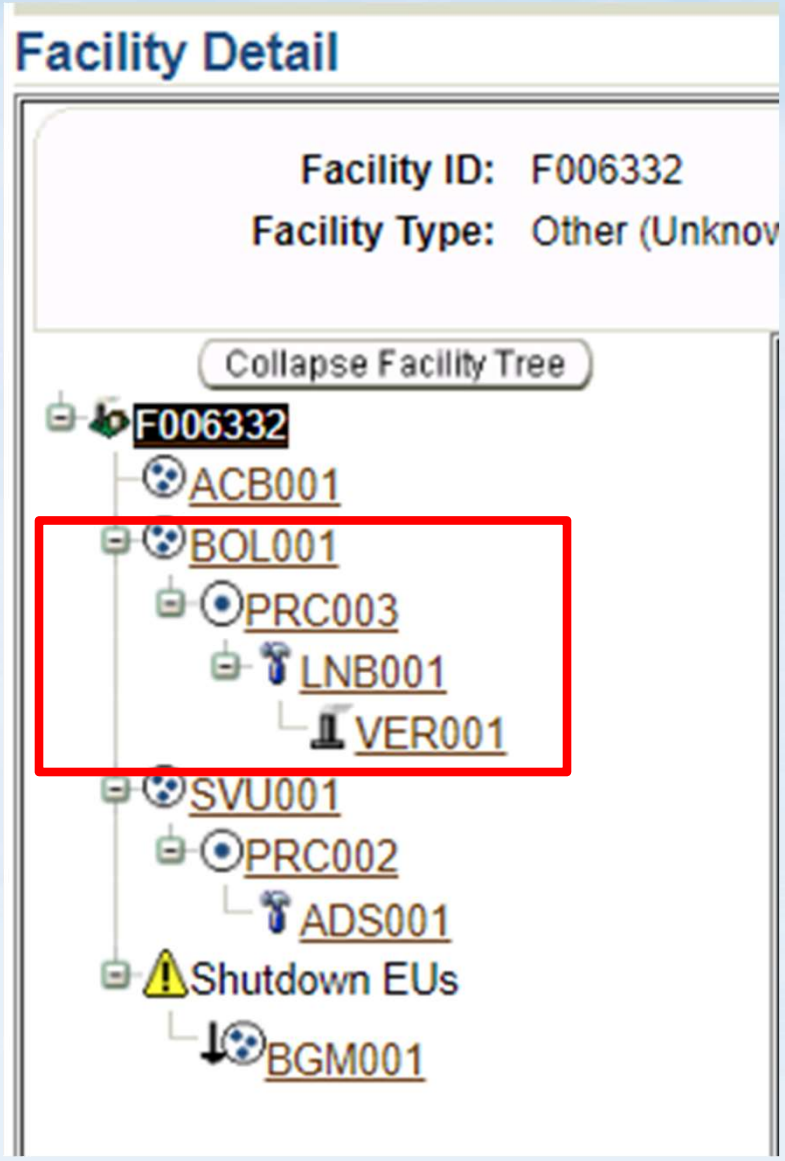
Task 2

- Facility Inventory Change
  - Review facility inventory tree
  - Update as necessary
  - Facility inventory tree should reflect the actual equipment and operations at the facility
- Report the number of employees that worked at the facility or telecommuted for the facility
- Validate changes
- *Do not submit changes yet*

Maricopa County AIR QUALITY DEPARTMENT

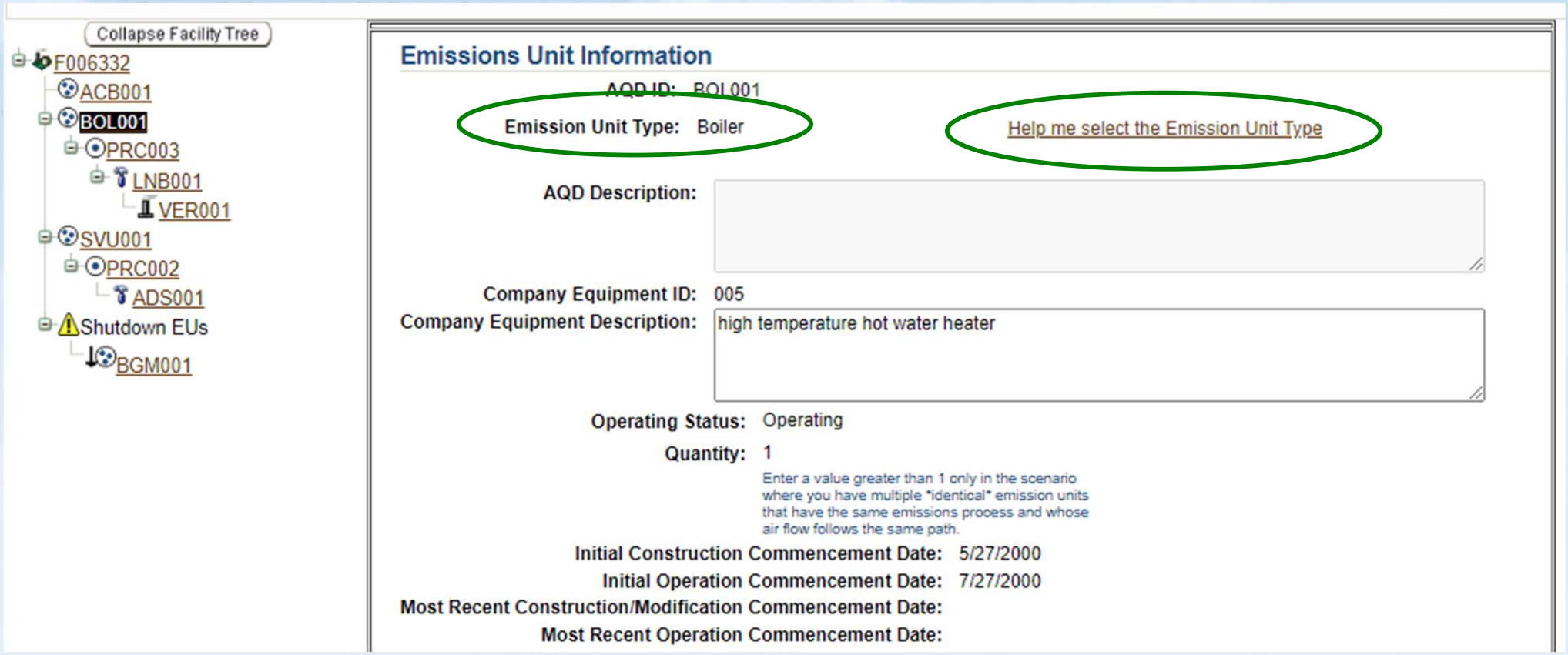
Facility Inventory Tree

- Emission Units
- Emissions Processes
- Control Equipment
- Release Points



Maricopa County AIR QUALITY DEPARTMENT

Emission Units (EUs)



Maricopa County AIR QUALITY DEPARTMENT

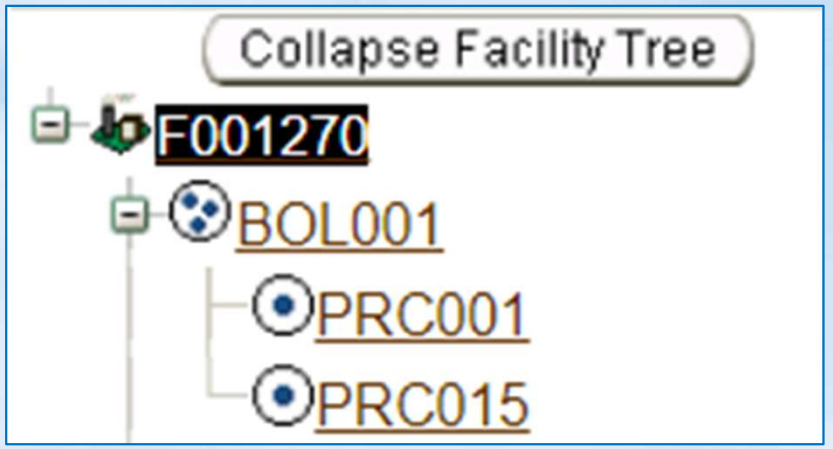
Emission Unit Types

Emission Unit Type Selection:

Abbreviation	Select This	If you have one of these
ABS	Abrasive Blasting	Abrasive Blasting
ACB	Air Curtain Burner	Air Curtain Burner, Air Curtain Destructor
BAK	Bakery	Bakery
BGM	Bagging Machine	Bagging Machine
BOL	Boiler	Boilers (Not used for electrical generation)
CKD	Calciner/Kiln/Dryer/Smelter/Foundry Furnace	Calciner, Kiln, Dryer, Smelter/Foundry Furnace, Fluid Bed Dryer
CMX	Concrete Batch/Cement Mixer	Concrete Batch/Cement Mixers
COT	Spray Booth or Coating Line	Bay, Booth, Coating System, Spray Booth, Spray Enclosure, Spray Gun, Spray System, Spray/Bake Booth, Enclosure, Roll Coating Paint Station, Gel Coating, Resin Applications, Adhesives
CSH	Crushing/Screening/Handling	Crusher, Screener, Grinder, Material Handling Unit, Conveyor, Conveyor Transfer Point, Mill, Pulverizer
CTW	Cooling Tower	Cooling Tower
DIS	Distillation Unit	Distillation Unit
DRY	Dry Cleaning	Dry Cleaner Vapor Control Unit, Dry to Dry Cleaning Machine
EGU	Electric Generating Unit	Generators (Used for electrical generation sale), Engines (Used for electrical generation sale), Turbines (Used for electrical generation sale), Boilers (Used for electrical generation sale)
ENG	Engine	Generators (Not used for selling electrical generation), Engines (Not used for selling electrical generation), Turbines (Not used for selling electrical generation)
FAT	Deep Fat Frying/ Cooking	Deep Fat Fryer, Tilt Skillet, Fryer, Cooker, Extruder
FLR	Flare	Flare
FOM	Foam Production	Expansion Process, Bead Storage, Pouring, Aging Bag, Pre-Expander, Polystyrene
FUG	Open Air Fugitive Source	Landfills, Settling Ponds, Drying Beds, Haul Roads
GIN	Cotton Gin	Cotton Gin
GRI	Grinder	Grinder

Emissions Processes

- Attached to emission units
  - Used for emission reporting
  - Process description
  - Source Classification Code (SCC)



Process Information

Process ID:	PRC001
Process Name:	Boiler (Natural Gas)
Company Process Description:	Boiler (Natural Gas)
Source Classification Code (SCC):	1-02-006-02
SCC Level 1 Description:	1:External Combustion Boilers
SCC Level 2 Description:	02:Industrial
SCC Level 3 Description:	006:Natural Gas
SCC Level 4 Description:	02:10-100 Million BTU/hr

SCC reference information

Edit | Delete

Create and Associate Control Equipment | Create and Associate Release Point

Associate Existing Control Equipment | Associate Existing Release Point

Disassociate Control Equipment | Disassociate Release Point

Process Information

Process ID:	PRC015
Process Name:	Boiler (Diesel Fuel)
Company Process Description:	Boiler - Emergency Fuel and Testing
Source Classification Code (SCC):	1-03-005-02
SCC Level 1 Description:	1:External Combustion Boilers
SCC Level 2 Description:	03:Commercial/Institutional
SCC Level 3 Description:	005:Distillate Oil
SCC Level 4 Description:	02:10-100 Million BTU/hr **

SCC reference information

Edit | Delete

Create and Associate Control Equipment | Create and Associate Release Point

Associate Existing Control Equipment | Associate Existing Release Point

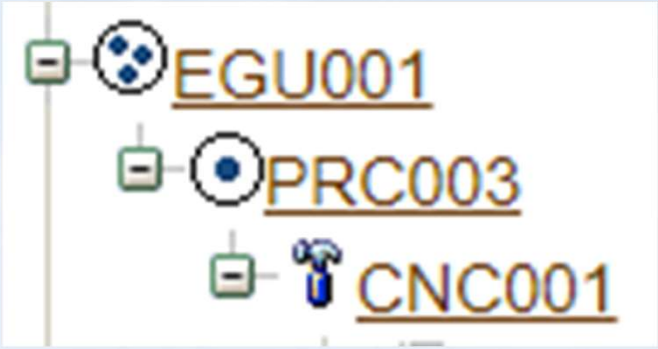
Disassociate Control Equipment | Disassociate Release Point

Maricopa County AIR QUALITY DEPARTMENT

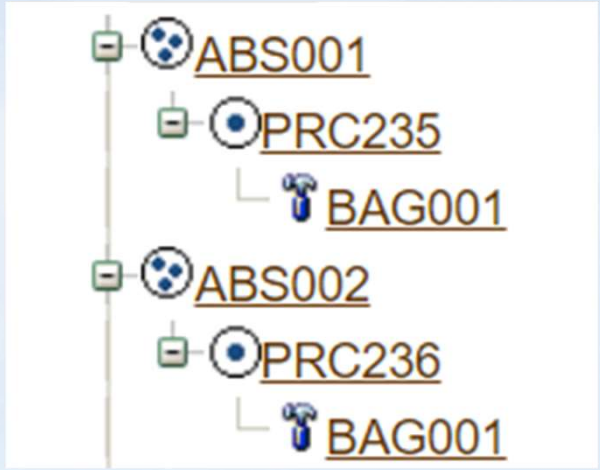
Control Equipment

- 21 different types
- Attached to emissions processes

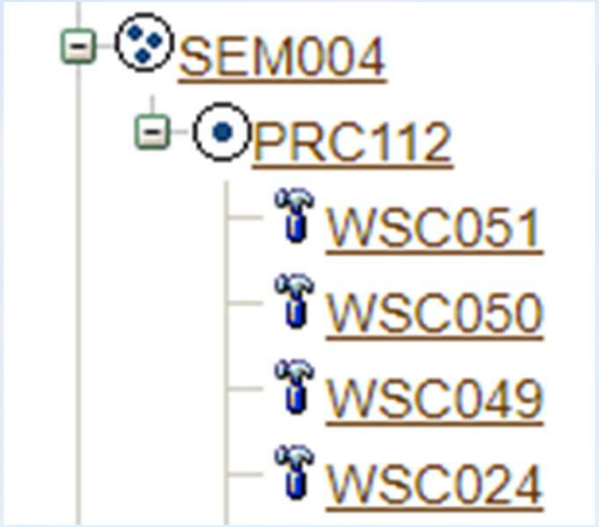
1 process : 1 control



2 process : 1 control

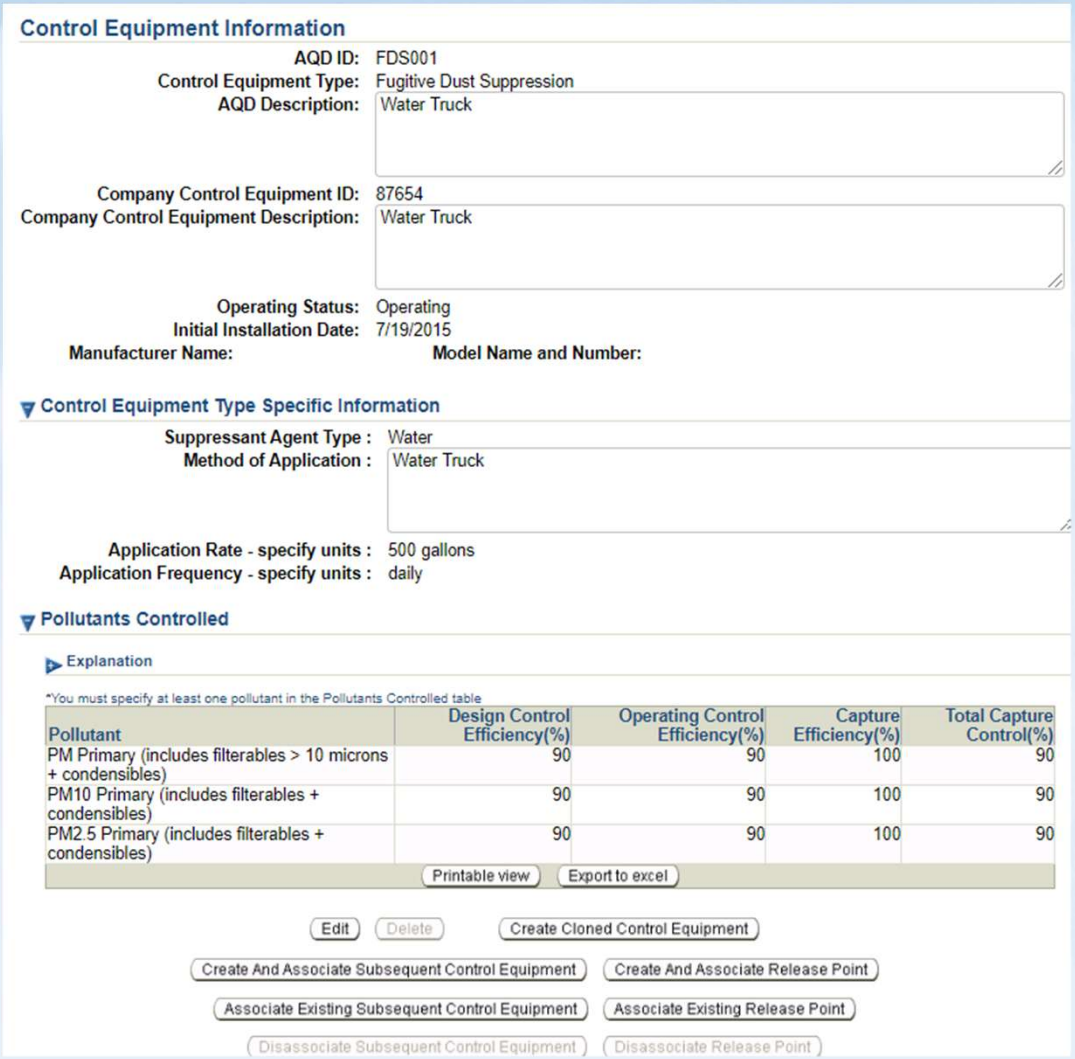


1 process : 2+ controls



Maricopa County AIR QUALITY DEPARTMENT

Control Equipment



Control Equipment Information

AQD ID: FDS001
Control Equipment Type: Fugitive Dust Suppression
AQD Description: Water Truck

Company Control Equipment ID: 87654
Company Control Equipment Description: Water Truck

Operating Status: Operating
Initial Installation Date: 7/19/2015
Manufacturer Name: Model Name and Number:

Control Equipment Type Specific Information

Suppressant Agent Type : Water
Method of Application : Water Truck

Application Rate - specify units : 500 gallons
Application Frequency - specify units : daily

Pollutants Controlled

Explanation

*You must specify at least one pollutant in the Pollutants Controlled table

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PM Primary (includes filterables > 10 microns + condensibles)	90	90	100	90
PM10 Primary (includes filterables + condensibles)	90	90	100	90
PM2.5 Primary (includes filterables + condensibles)	90	90	100	90

Printable view | Export to excel

Edit | Delete | Create Cloned Control Equipment
Create And Associate Subsequent Control Equipment | Create And Associate Release Point
Associate Existing Subsequent Control Equipment | Associate Existing Release Point
Disassociate Subsequent Control Equipment | Disassociate Release Point

- Capture & control efficiency
  - Performance test
  - Design specifications
- For particulate matter (PM) controls
  - PM primary
  - PM_{10} primary
  - $PM_{2.5}$ primary

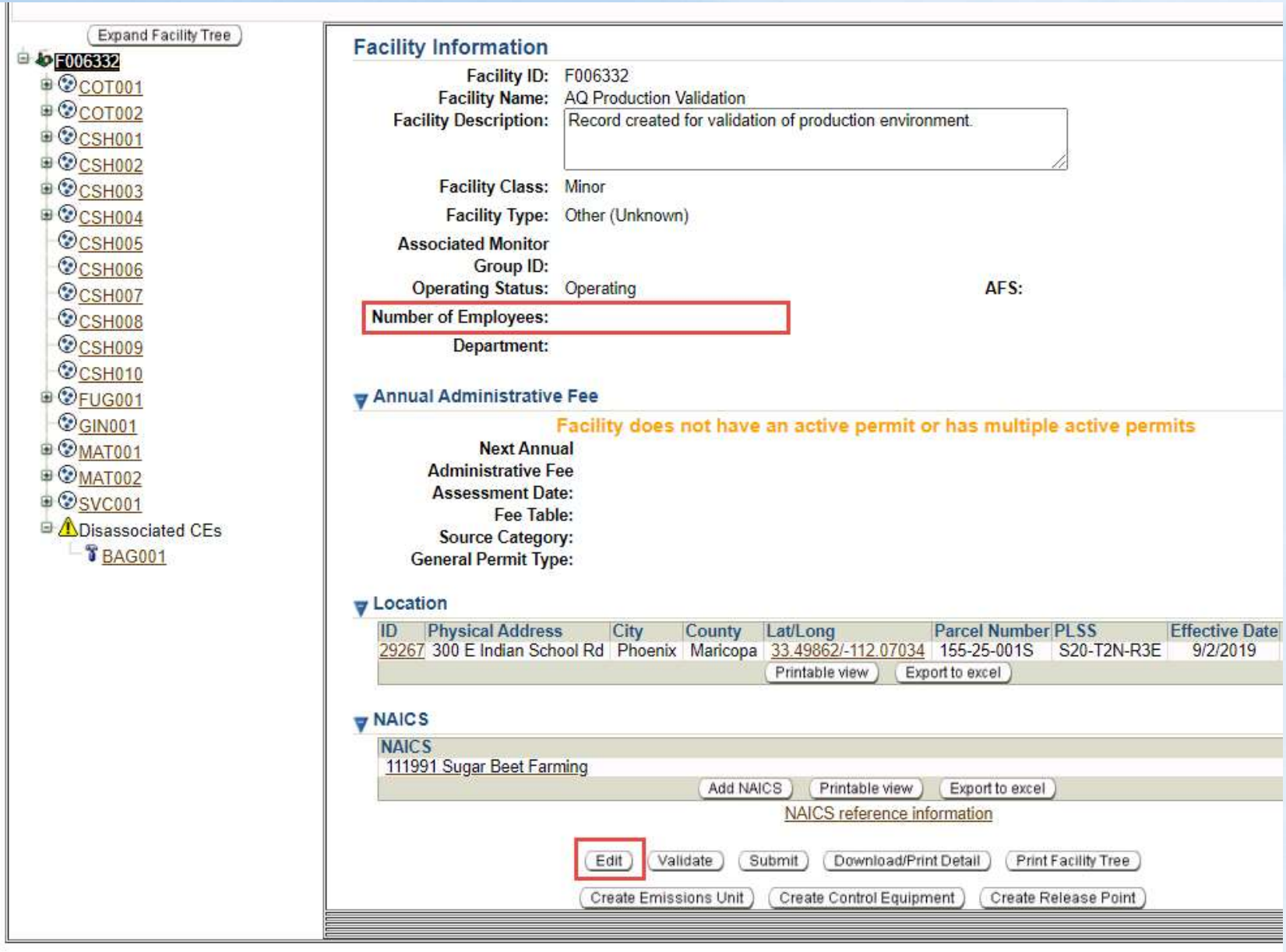
Maricopa County AIR QUALITY DEPARTMENT

Release Points

- Required for facilities that emit 10 tons (or more) per year of any pollutant
- Three types
  - Vertical
  - Horizontal
  - Fugitive
- Controlled emissions process
  - Associate release point with control equipment
- Uncontrolled emission processes
  - Associate with emissions process

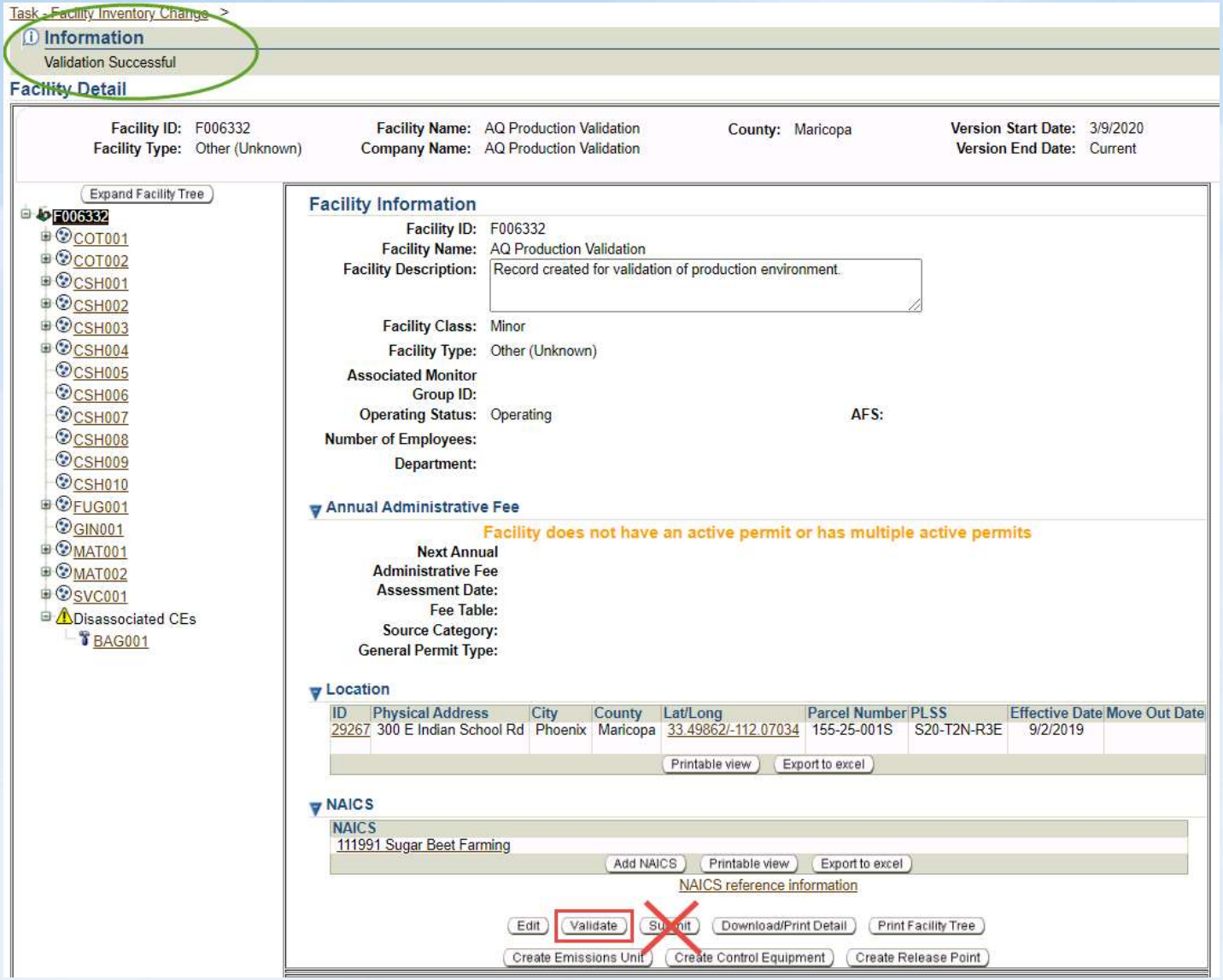
Maricopa County AIR QUALITY DEPARTMENT

Number of Employees in 2021



Maricopa County AIR QUALITY DEPARTMENT

Validate (Do Not Submit)



Maricopa County AIR QUALITY DEPARTMENT

Correct Errors

Severity	EU ID	Message
ERROR		Control Equipment [FRT001]: does not have any controlled pollutant
ERROR		Control Equipment [FRT004]: does not have any controlled pollutant
ERROR		Control Equipment [FRT005]: does not have any controlled pollutant
ERROR		Control Equipment [FRT007]: does not have any controlled pollutant
ERROR		Control Equipment [FRT009]: does not have any controlled pollutant

Printable view Export to excel

Close

- Click error message
- Correct error
- Click save
- Validate again

Maricopa County AIR QUALITY DEPARTMENT

Questions

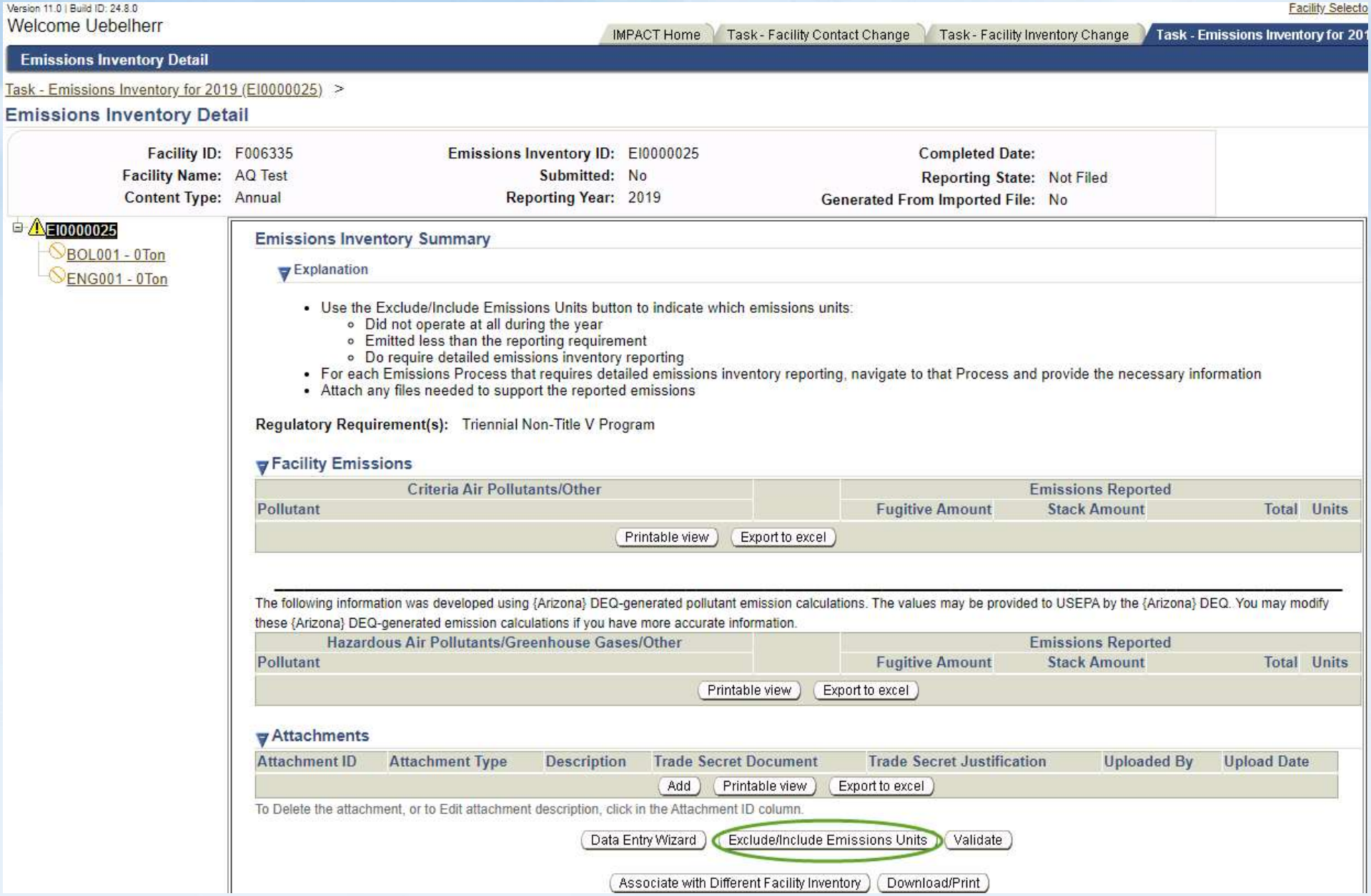
Maricopa County
AIR QUALITY
DEPARTMENT

Task 3

- Emissions inventory
  - Exclude emission units
    - Did not operate
    - Less than reporting requirement
    - Reported under another EU
  - Report emissions for each process
    - Operating schedule
    - Throughput
    - Seasonal percentages
    - Emission factors
  - Validate emissions inventory

Maricopa County AIR QUALITY DEPARTMENT

Exclude Emission Units



Exclude Emission Units

- Did not operate
- Less than reporting requirements

Maricopa County AIR QUALITY DEPARTMENT

Less Than Reporting Requirements

- Welding
- Soil remediation
- Acetone use
- Motor vehicle emissions
- Emissions from storage of diesel fuel or Jet A fuel
  - In underground storage tanks (any size)
  - In above ground storage tanks (if throughput is less than 17,000,000 gallons/year

Maricopa County AIR QUALITY DEPARTMENT

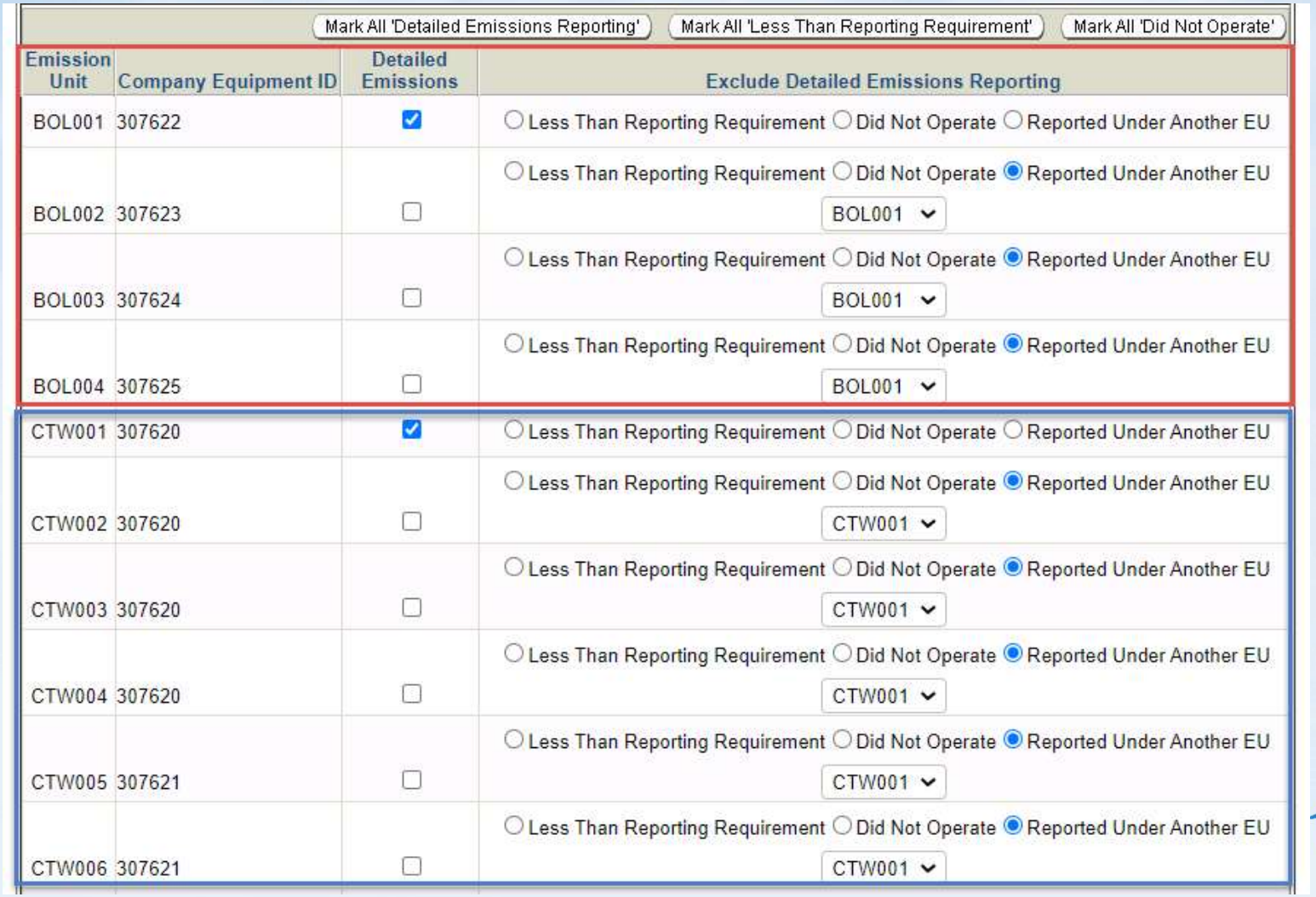
Less Than Reporting Requirements

- Routine pesticide usage, housekeeping cleaners, and routine maintenance painting at your facility
- Materials with usage less than 15 gallons or 100 pounds per year.
  - Group all similar materials together before determining if reporting is required

Maricopa County AIR QUALITY DEPARTMENT

Exclude Emission Units

Reported under another EU



Maricopa County AIR QUALITY DEPARTMENT

Reported Under Another EU

- Aggregate when specific throughput is not known for each EU
  - Boilers and water heaters
  - Silos storing the same material
  - Multiple similar gasoline storage tanks
    - Underground storage tanks
    - Aboveground storage tanks
- Aggregate when there are many identical EUs
  - Conveyors, crushers, screens, etc.
- Aggregated emission units must have the same throughput material and emission factors

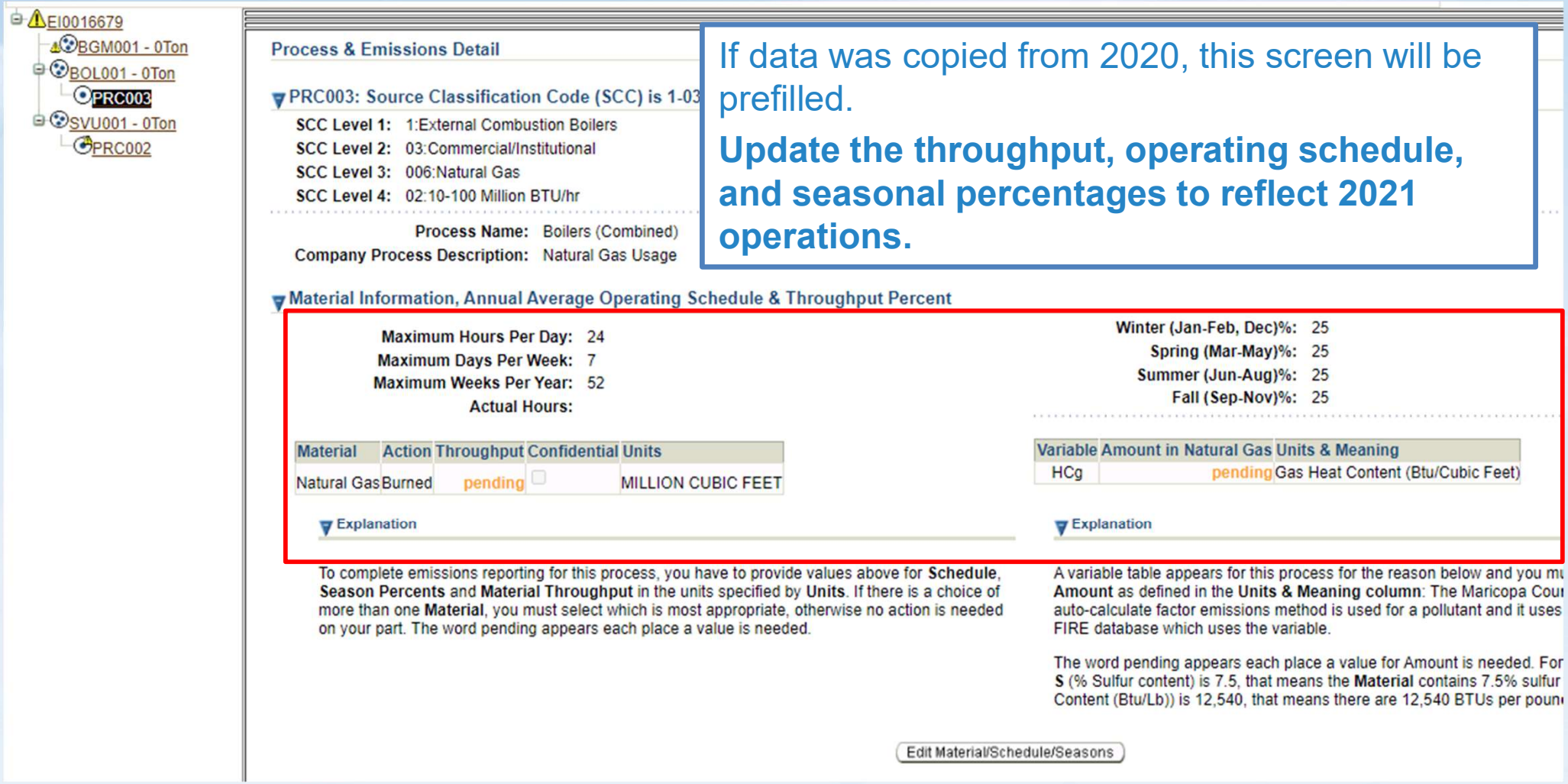
Maricopa County AIR QUALITY DEPARTMENT

What to Report

Emissions from processes that emit:	
PM Primary	Particulate matter
PM_{10} Primary	Particulate matter less than 10 microns in diameter
$PM_{2.5}$ Primary	Particulate matter less than 2.5 microns in diameter
CO	Carbon monoxide
NO_X	Nitrogen oxides
SO_X	Sulfur oxides
VOC	Volatile organic compounds
NH_X	Ammonia
HAPs	Hazardous air pollutants

Maricopa County AIR QUALITY DEPARTMENT

Throughput & Operating Hours

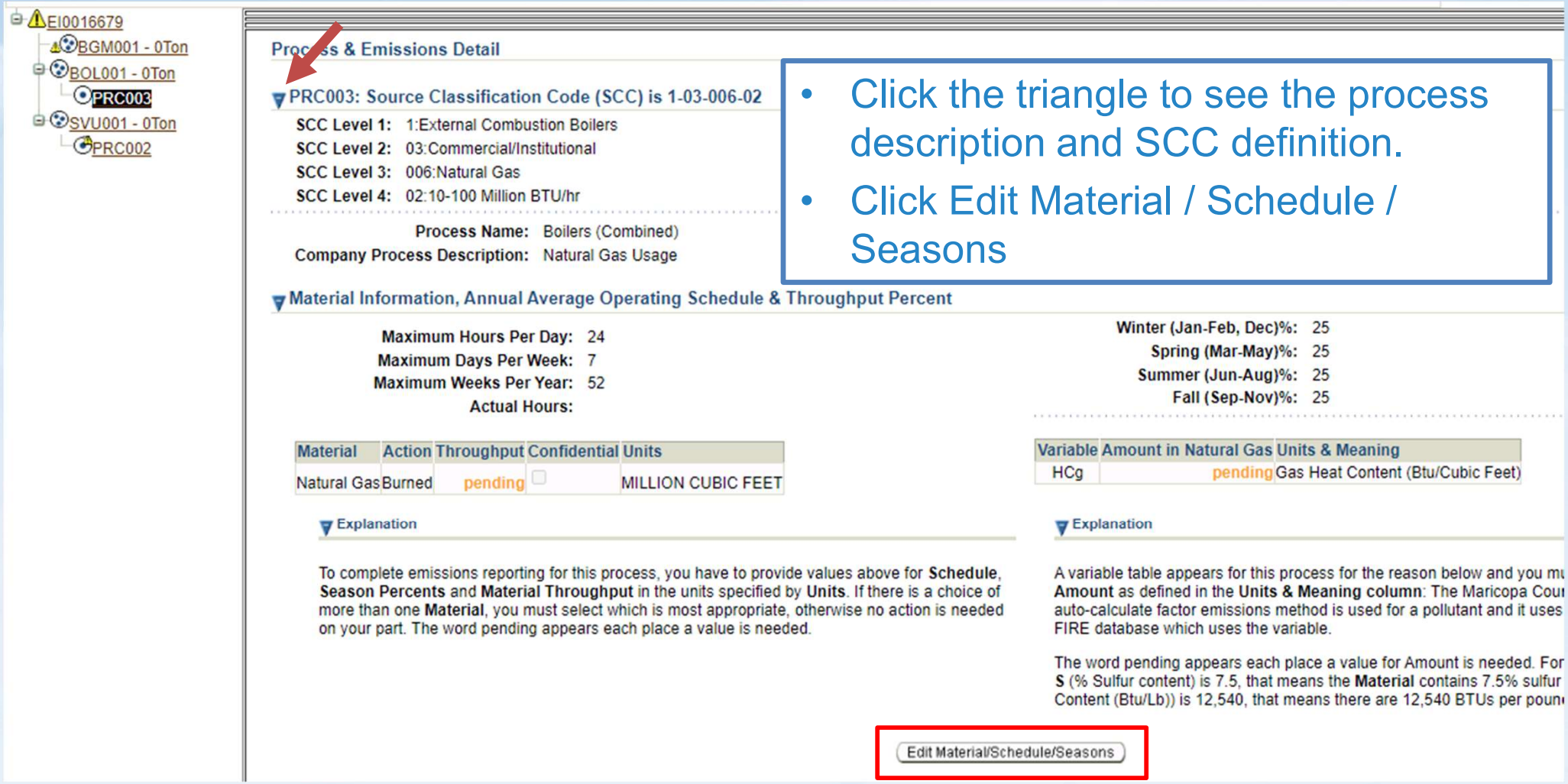


If data was copied from 2020, this screen will be prefilled.

Update the throughput, operating schedule, and seasonal percentages to reflect 2021 operations.

Maricopa County AIR QUALITY DEPARTMENT

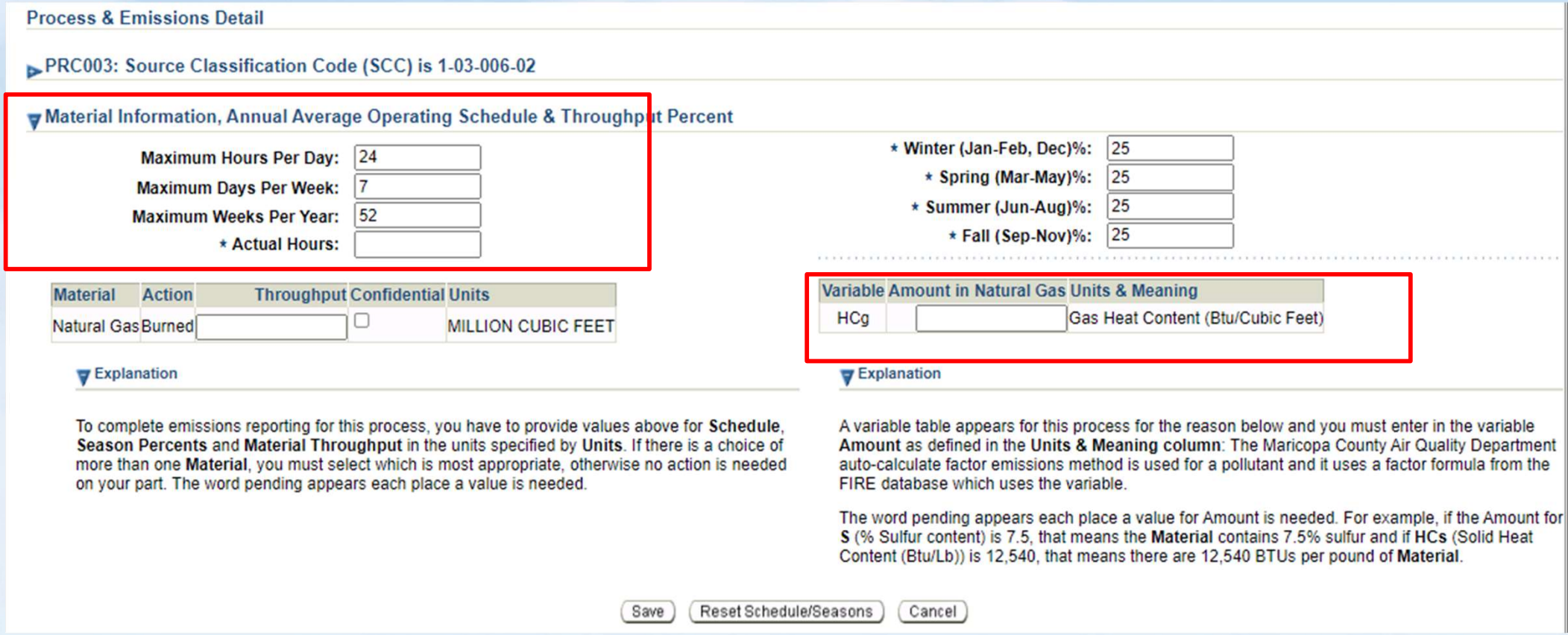
Throughput & Operating Hours



- Click the triangle to see the process description and SCC definition.
- Click Edit Material / Schedule / Seasons

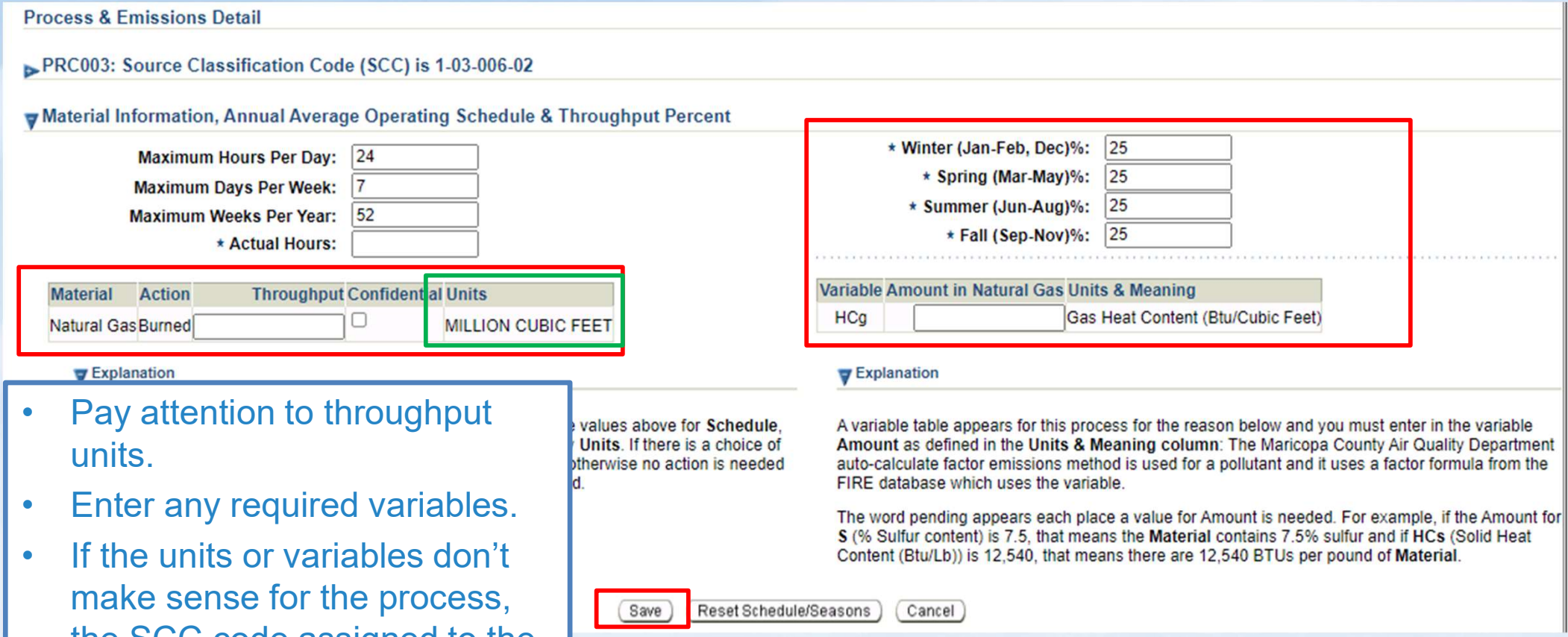
Maricopa County AIR QUALITY DEPARTMENT

Throughput & Operating Hours



Maricopa County AIR QUALITY DEPARTMENT

Throughput & Operating Hours



- Pay attention to throughput units.
- Enter any required variables.
- If the units or variables don't make sense for the process, the SCC code assigned to the process may be incorrect.
- SCC codes can be changed on the Task – Facility Inventory Change tab.
- Complete data entry and click save.

Maricopa County AIR QUALITY DEPARTMENT

Report Emissions

Criteria Air Pollutants/Other

Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Emissions Reported: Fugitive Amount	Emissions Reported: Stack Amount	Emissions Reported: Total	Units	Explanation
PM Primary (includes filterables > 10 microns + condensibles)	Throughput-based factor Available factors: 1	0	7.6		0	0.01444	0.01444	TONS	
PM10 Primary (includes filterables + condensibles)	Throughput-based factor Available factors: 1	0	7.6		0	0.01444	0.01444	TONS	
PM2.5 Primary (includes filterables + condensibles)	Throughput-based factor Available factors: 1	0	7.6		0	0.01444	0.01444	TONS	
CO - Carbon Monoxide	Throughput-based factor Available factors: 1	0	84		0	0.1596	0.1596	TONS	
NOx - Nitrogen Oxides	Throughput-based factor Available factors: 1	0	100		0	0.019	0.019	TONS	
SO2 - Sulfur Dioxide	Throughput-based factor Available factors: 1	0	0.6		0	0.00114	0.00114	TONS	
VOC - Volatile Organic Compounds	Throughput-based factor (pending) Available factors: 2	0	pending					TONS	
Ammonia	Throughput-based factor Available factors: 1	0	0.49		0	9.31E-04	9.31E-04	TONS	

Printable view | Export to excel

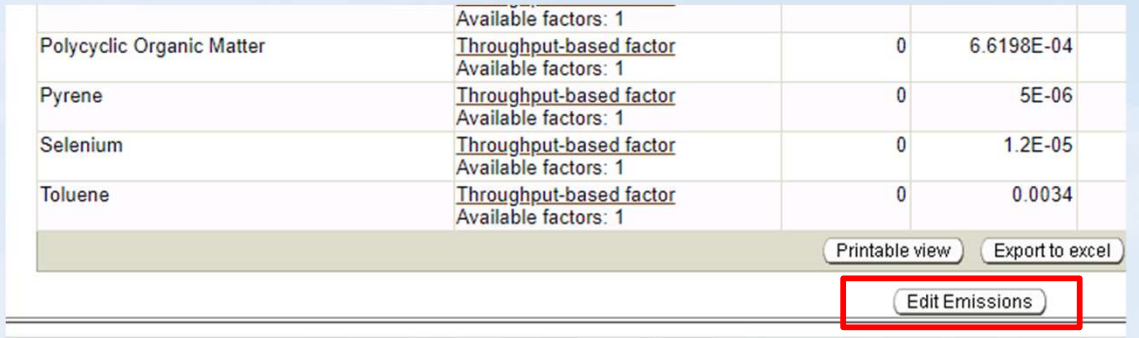
formation was developed using (Arizona) DEQ-generated pollutant emission calculations. The values may be provided to USEPA by the (Arizona) DEQ. You may modify these (Arizona) DEQ-generated emission calculations if you have more ac

Hazardous Air Pollutants/Greenhouse Gases/Other

Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Emissions Reported: Fugitive Amount	Emissions Reported: Stack Amount	Emissions Reported: Total	Units	Explanation
Carbon Dioxide	Throughput-based factor Available factors: 1	0	120,000		0	228	228	TONS	
Methane	Throughput-based factor Available factors: 1	0	2.3		0	0.00437	0.00437	TONS	
Nitrous Oxide	Throughput-based factor Available factors: 1	0	2.2		0	0.00418	0.00418	TONS	
Acenaphthene	Throughput-based factor Available factors: 1	0	9E-07		0	1.71E-09	1.71E-09	TONS	
Acenaphthylene	Throughput-based factor Available factors: 1	0	9E-07		0	1.71E-09	1.71E-09	TONS	
Acetaldehyde	Throughput-based factor (pending) Available factors: 3	0	pending					TONS	
Acrolein	Throughput-based factor Available factors: 1	0	0.01836		0	3.4884E-05	3.4884E-05	TONS	
Anthracene	Throughput-based factor Available factors: 1	0	1.2E-06		0	2.28E-09	2.28E-09	TONS	
Arsenic	Throughput-based factor Available factors: 1	0	2E-04		0	3.8E-07	3.8E-07	TONS	
Benz[A]Anthracene	Throughput-based factor Available factors: 1	0	9E-07		0	1.71E-09	1.71E-09	TONS	
Benzene	Throughput-based factor Available factors: 1	0	0.0021		0	3.99E-06	3.99E-06	TONS	
Benzo[A]Pyrene	Throughput-based factor Available factors: 1	0	6E-07		0	1.14E-09	1.14E-09	TONS	
Benzo[B]Fluoranthene	Throughput-based factor Available factors: 1	0	9E-07		0	1.71E-09	1.71E-09	TONS	
Benzo[G,H,I]Perylene	Throughput-based factor Available factors: 1	0	6E-07		0	1.14E-09	1.14E-09	TONS	
Benzo[K]Fluoranthene	Throughput-based factor Available factors: 1	0	9E-07		0	1.71E-09	1.71E-09	TONS	
Beryllium	Throughput-based factor Available factors: 1	0	6E-06		0	1.14E-08	1.14E-08	TONS	
Cadmium	Throughput-based factor Available factors: 1	0	0.0011		0	2.09E-06	2.09E-06	TONS	
Chromium	Throughput-based factor Available factors: 1	0	0.0014		0	2.66E-06	2.66E-06	TONS	
Chrysene	Throughput-based factor Available factors: 1	0	9E-07		0	1.71E-09	1.71E-09	TONS	
Cobalt	Throughput-based factor Available factors: 1	0	8.4E-05		0	1.596E-07	1.596E-07	TONS	
Dibenzo[A,H]Anthracene	Throughput-based factor Available factors: 1	0	6E-07		0	1.14E-09	1.14E-09	TONS	
Dimethylbenz[A]Anthracene, 7,12-	Throughput-based factor Available factors: 1	0	8E-06		0	1.52E-08	1.52E-08	TONS	
Fluoranthene	Throughput-based factor Available factors: 1	0	3E-06		0	5.7E-09	5.7E-09	TONS	
Fluorene	Throughput-based factor Available factors: 1	0	2.8E-06		0	5.32E-09	5.32E-09	TONS	
Formaldehyde	Throughput-based factor Available factors: 1	0	0.075		0	1.425E-04	1.425E-04	TONS	
Hexane, N-	Throughput-based factor Available factors: 1	0	1.8		0	0.00342	0.00342	TONS	
Indeno[1,2,3-C,D]Pyrene	Throughput-based factor Available factors: 1	0	9E-07		0	1.71E-09	1.71E-09	TONS	
MN - Manganese	Throughput-based factor Available factors: 1	0	3.8E-04		0	7.22E-07	7.22E-07	TONS	
Mercury, as HG; Alkyl & Aryl CMPNDS; Elemental & Inorganic Forms	Throughput-based factor Available factors: 1	0	2.6E-04		0	4.94E-07	4.94E-07	TONS	
Methylcholanthrene, 3-	Throughput-based factor Available factors: 1	0	9E-07		0	1.71E-09	1.71E-09	TONS	
Methylnaphthalene, 2-	Throughput-based factor Available factors: 1	0	2.4E-05		0	4.56E-08	4.56E-08	TONS	
Naphthalene	Throughput-based factor Available factors: 1	0	6.1E-04		0	1.159E-06	1.159E-06	TONS	
Nickel	Throughput-based factor Available factors: 1	0	0.0021		0	3.99E-06	3.99E-06	TONS	
Pb - Lead	Throughput-based factor Available factors: 1	0	5E-04		0	9.5E-07	9.5E-07	TONS	
Phenanthrene	Throughput-based factor Available factors: 1	0	1.7E-05		0	3.23E-08	3.23E-08	TONS	
Polycyclic Organic Matter	Throughput-based factor Available factors: 1	0	6.6198E-04		0	1.25776E-06	1.25776E-06	TONS	
Pyrene	Throughput-based factor Available factors: 1	0	5E-06		0	9.5E-09	9.5E-09	TONS	
Selenium	Throughput-based factor Available factors: 1	0	1.2E-05		0	2.28E-08	2.28E-08	TONS	
Toluene	Throughput-based factor Available factors: 1	0	0.0034		0	6.46E-06	6.46E-06	TONS	

Printable view | Export to excel

Edit Emissions



	Available factors: 1		
Polycyclic Organic Matter	Throughput-based factor Available factors: 1	0	6.6198E-04
Pyrene	Throughput-based factor Available factors: 1	0	5E-06
Selenium	Throughput-based factor Available factors: 1	0	1.2E-05
Toluene	Throughput-based factor Available factors: 1	0	0.0034

Printable view | Export to excel

Edit Emissions

Maricopa County AIR QUALITY DEPARTMENT

What to Report

- Report all Criteria Air Pollutant emissions
  - Enter 0 for pollutants that are not emitted
- Report Hazardous Air Pollutant emissions when
  - Emission factors are provided in the AQD Online Portal
  - Facility is subject to a federal standard for HAPs
  - Permit contains HAP emission limit(s)

Maricopa County AIR QUALITY DEPARTMENT

Criteria Pollutants and Precursors

Criteria Air Pollutants/Other					Emissions Reported				
Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Fugitive Amount	Stack Amount	Total	Units	Explanation
PM Primary (includes filterables > 10 microns + condensibles)	Throughput-based factor	0	pending					TONS	
PM10 Primary (includes filterables + condensibles)	Throughput-based factor	0	pending					TONS	
PM2.5 Primary (includes filterables + condensibles)	Throughput-based factor	0	pending					TONS	
CO - Carbon Monoxide	Throughput-based factor Available factors: 1	0	130					TONS	
NOx - Nitrogen Oxides	Throughput-based factor Available factors: 1	0	604					TONS	
SO2 - Sulfur Dioxide	Throughput-based factor Available factors: 1	0	39.7					TONS	
VOC - Volatile Organic Compounds	Throughput-based factor Available factors: 1	0	49.3					TONS	
Ammonia	Throughput-based factor	0	pending					TONS	

Printable view | Export to excel

Maricopa County AIR QUALITY DEPARTMENT

Common HAPs

- Methylene chloride (dichloromethane)
- Perchloroethylene
- 111-Trichloroethane (111-TCA or methyl chloroform)
- Hydrochloric acid
- Hydrofluoric acid

Maricopa County AIR QUALITY DEPARTMENT

Hazardous Air Pollutants

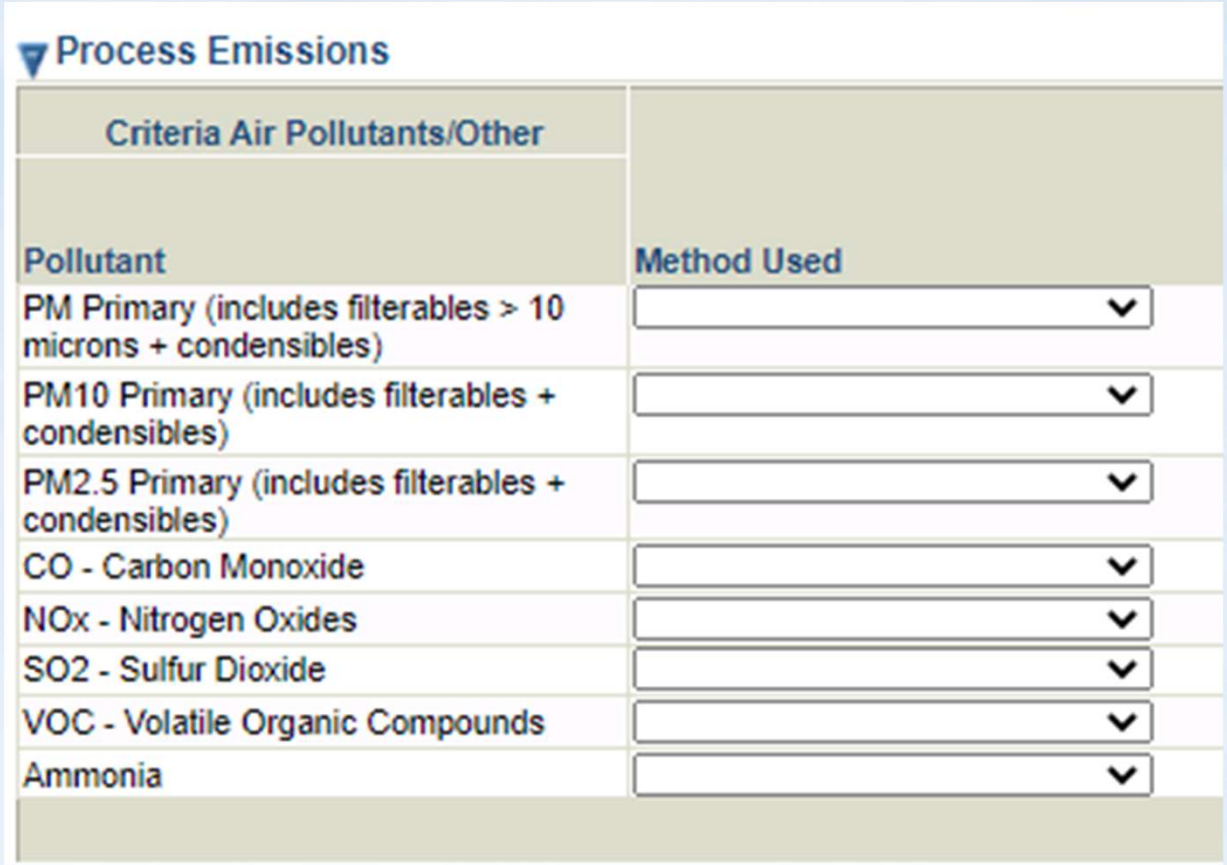
Hazardous Air Pollutants/Greenhouse Gases/Other			Uncontrolled Emissions Factor	Time-based Factor	Emissions Reported				
Pollutant	Method Used	Hours Uncontrolled	(Lbs/Throughput Units)	(LBS/Hour)	Fugitive Amount	Stack Amount	Total	Units	Explanation
Carbon Dioxide	Throughput-based factor Available factors: 1	0	22,600					TONS	
Acenaphthene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Acenaphthylene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Acetaldehyde	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Acrolein	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Anthracene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Benz[A]Anthracene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Benzene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Benzo[A]Pyrene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Benzo[B]Fluoranthene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Benzo[G,H,I,]Perylene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Benzo[K]Fluoranthene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Butadiene, 1,3-	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Chrysene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Dibenzo[A,H]Anthracene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Ethyl Benzene	Throughput-based factor Available factors: 1	0	0.00307					TONS	
Fluoranthene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Fluorene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Formaldehyde	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Indeno[1,2,3-C,D]Pyrene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Mercury, as HG; Alkyl & Aryl CMPNDS; Elemental & Inorganic Forms	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Naphthalene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
PAH, 16-	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Phenanthrene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Pyrene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Toluene	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	
Xylenes (Isomers and Mixture)	Throughput-based factor Available factors: 1	0	pending variable amount					TONS	

Printable view | Export to excel

Maricopa County AIR QUALITY DEPARTMENT

Reporting Emissions

- Click “Edit Emissions”
- Select calculation method for each pollutant



Maricopa County AIR QUALITY DEPARTMENT

Hierarchy of Preferred Emission Calculation Methods

To develop your annual emissions inventory, the most accurate method for calculating actual emissions must be used. The "hierarchy of preferred methods" on the following slides describes, in order, the preferred methods for calculating emission estimates.

(Rule 280, Section 304.1)

Maricopa County AIR QUALITY DEPARTMENT

Hierarchy of Emission Calculation Methods

Whenever available, emissions estimates should be calculated from Continuous Emissions Monitoring Systems (CEMS) certified under 40 CFR 75, Subpart C or data that has been quality-assured pursuant to of 40 CFR 60, Appendix F .

Maricopa County AIR QUALITY DEPARTMENT

Reporting CEMS Emissions

- Method: **Time-based factor - CEM**
- Calculate Time Based Emission Factor
- Example – EGU001
  - CEMS measured 50,839 pounds of NOX emissions
  - Total operating hours = 4,131
  - 50,839 / 4,131 = **12.31 pounds/hour**

Maricopa County AIR QUALITY DEPARTMENT

Reporting CEMS Emissions

Process Emissions

Criteria Air Pollutants/Other Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)
PM Primary (includes filterables > 10 microns + condensibles)			7.6	
PM10 Primary (includes filterables + condensibles)			7.6	
PM2.5 Primary (includes filterables + condensibles)			7.6	
CO - Carbon Monoxide			84	
NOx - Nitrogen Oxides	Time-based factor - CEM	0	100	12.31
SO2 - Sulfur Dioxide			0.6	
VOC - Volatile Organic Compounds			5.5	
Ammonia			0.49	

Printable view | Export to excel

Maricopa County AIR QUALITY DEPARTMENT

Hierarchy of Emission Calculation Methods

1. CEMS Data
2. When sufficient data obtained using the methods described in (1) is not available, emissions estimates should be calculated from source performance tests conducted in accordance with Maricopa County Rule 270 (Performance Tests).

Maricopa County AIR QUALITY DEPARTMENT

Performance Test Emission Factors

- Method: **Time-based factor – Stack Test**
- Refer to the performance test determination letter from MCAQD
  - Time-based EF = **3.6 lb/hr**
  - Throughput based EF = 2.0349 lb/MMCF
    - Convert to lb/hr
    - Total operating hours = 4,131
    - Total fuel combustion = 6,781 MMCF
    - (2.0349 x 6,781) / 4,131 = **3.34 lb/hour**

Maricopa County AIR QUALITY DEPARTMENT

Performance Test Emission Factors

Process Emissions

Criteria Air Pollutants/Other Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)
PM Primary (includes filterables > 10 microns + condensibles)	Time-based factor - Stack Test	8760	7.6	3.6
PM10 Primary (includes filterables + condensibles)			7.6	
PM2.5 Primary (includes filterables + condensibles)			7.6	
CO - Carbon Monoxide			84	
NOx - Nitrogen Oxides	Time-based factor - CEM	0	100	12.31
SO2 - Sulfur Dioxide			0.6	
VOC - Volatile Organic Compounds				
Ammonia			0.49	

Printable view | Export to excel

Maricopa County AIR QUALITY DEPARTMENT

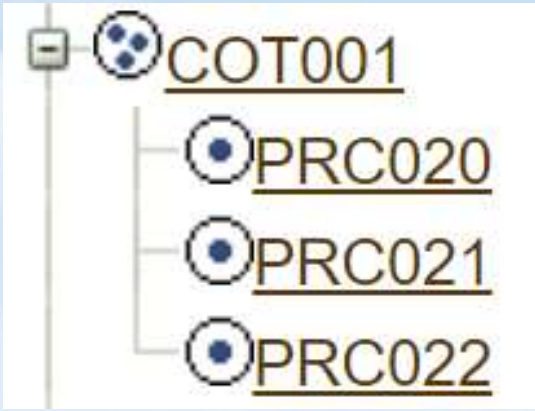
Hierarchy of Emission Calculation Methods

1. CEMS Data
2. Performance Tests
3. When sufficient data obtained using the methods described in (1) or (2) is not available, emissions estimates should be calculated by a material mass balance using engineering knowledge of the process.

Maricopa County AIR QUALITY DEPARTMENT

Material Mass Balance

- Frequently used for solvents, paints, and other evaporative processes
- Facility Tree
  - One process for each SCC



Process Information

Process ID:	PRC020
Process Name:	Paints
Company Process Description:	
Source Classification Code (SCC):	4-02-002-01
SCC Level 1 Description:	4:Petroleum and Solvent Evaporation
SCC Level 2 Description:	02:Surface Coating Operations
SCC Level 3 Description:	002:Surface Coating Application - General
SCC Level 4 Description:	01:Paint: Water-base

Process Information

Process ID:	PRC021
Process Name:	
Company Process Description:	
Source Classification Code (SCC):	4-02-007-10
SCC Level 1 Description:	4:Petroleum and Solvent Evaporation
SCC Level 2 Description:	02:Surface Coating Operations
SCC Level 3 Description:	007:Surface Coating Application - General
SCC Level 4 Description:	10:Adhesive: General

Process Information

Process ID:	PRC022
Process Name:	
Company Process Description:	
Source Classification Code (SCC):	4-02-025-99
SCC Level 1 Description:	4:Petroleum and Solvent Evaporation
SCC Level 2 Description:	02:Surface Coating Operations
SCC Level 3 Description:	025:Miscellaneous Metal Parts
SCC Level 4 Description:	99:Other Not Classified

Maricopa County AIR QUALITY DEPARTMENT

Material Usage Calculation Tool

- Download tool
  - Maricopa.gov/5628
- List materials, type, throughput units, and usage
- Identify process ID for each material

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Year:	2018																
2	Process ID	Name/ Description	Material type	Units	Pollutant	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec/Year	Annual Total
3	PRC020	Water based primer	Paint	gal	VOC			50.0					50.0					100.0
4	PRC020	Water based topcoat	Paint	gal	VOC					50.0								50.0
5	PRC021	Adhesive A225	Adhesive	gal	VOC		50.0											50.0
6	PRC021	Adhesive A226	Adhesive	gal	VOC		50.0											50.0
7	PRC022	Adhesive Primer	Adhesive Prim	gal	VOC		50.0											50.0
8	PRC022	Metal Primer	Primer	gal	VOC		100.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	600.0
9	PRC022	Metal topcoat	Paint	gal	VOC		100.0	100.0		50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	600.0

README | 1) Usage Records | 2) Emission Calcs | 3) Facility Info | Reference sheet

Maricopa County AIR QUALITY DEPARTMENT

Material Usage Calculation Tool

- Enter the emission factor from the safety data sheet or technical data sheet
- Enter the capture and control efficiency

	A	C	D	E	F	G	H	I	J	K	L
1	Process ID	Material type	Annual Amount of Material Used	Units	Pollutant	EF	Units	Capture Efficency	Control Efficency	Fugitive Amount (lb)	Stack Amount (lb)
2	PRC020	Paint	100.0	gal	VOC	1.2	lb/gal	0.0%	0.0%	120.0	0.0
3	PRC020	Paint	50.0	gal	VOC	2.1	lb/gal	0.0%	0.0%	105.0	0.0
4	PRC021	Adhesive	50.0	gal	VOC	1.6	lb/gal	0.0%	0.0%	80.0	0.0
5	PRC021	Adhesive	50.0	gal	VOC	1.1	lb/gal	0.0%	0.0%	55.0	0.0
6	PRC022	Adhesive Prim	50.0	gal	VOC	0.8	lb/gal	0.0%	0.0%	40.0	0.0
7	PRC022	Primer	600.0	gal	VOC	1.8	lb/gal	0.0%	0.0%	1080.0	0.0
8	PRC022	Paint	600.0	gal	VOC	1.5	lb/gal	0.0%	0.0%	900.0	0.0

README | 1) Usage Records | 2) Emission Calcs | 3) Facility Info | Reference sheet

Maricopa County AIR QUALITY DEPARTMENT

Material Usage Calculation Tool

- Refresh the pivot table

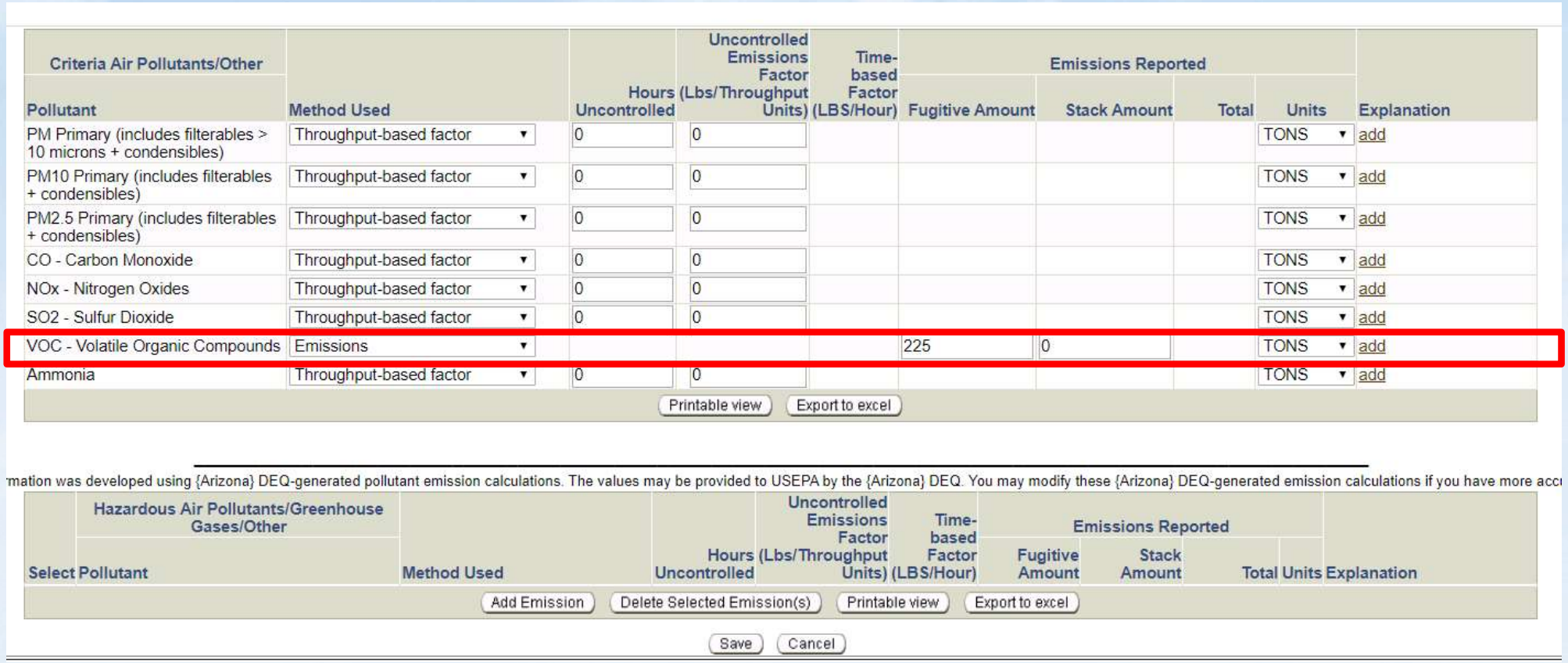
	A	B	C	D	E	F	G
1	INSTRUCTIONS: Right click within the table below and select **Refresh** from the menu to update data.						
2							
3	**Sum of Actual Emissions (lbs)**	**Pollutants (lbs)**					
4	**Process ID**	**VOC**					
5	PRC020	225					
6	PRC021	135					
7	PRC022	2020					

README | 1) Usage Records | 2) Emission Calcs | **3) Facility Info** | Reference sheet

Maricopa County AIR QUALITY DEPARTMENT

Reporting Emissions

- Method: Emissions



Criteria Air Pollutants/Other

Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Emissions Reported: Fugitive Amount	Stack Amount	Total	Units	Explanation
PM Primary (includes filterables > 10 microns + condensibles)	Throughput-based factor	0	0					TONS	add
PM10 Primary (includes filterables + condensibles)	Throughput-based factor	0	0					TONS	add
PM2.5 Primary (includes filterables + condensibles)	Throughput-based factor	0	0					TONS	add
CO - Carbon Monoxide	Throughput-based factor	0	0					TONS	add
NOx - Nitrogen Oxides	Throughput-based factor	0	0					TONS	add
SO2 - Sulfur Dioxide	Throughput-based factor	0	0					TONS	add
VOC - Volatile Organic Compounds	Emissions				225	0		TONS	add
Ammonia	Throughput-based factor	0	0					TONS	add

Printable view | Export to excel

mation was developed using {Arizona} DEQ-generated pollutant emission calculations. The values may be provided to USEPA by the {Arizona} DEQ. You may modify these {Arizona} DEQ-generated emission calculations if you have more acc

Hazardous Air Pollutants/Greenhouse Gases/Other

Select	Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Emissions Reported: Fugitive Amount	Stack Amount	Total	Units	Explanation

Add Emission | Delete Selected Emission(s) | Printable view | Export to excel

Save | Cancel

- Attach excel file on the emissions inventory summary page.

Maricopa County AIR QUALITY DEPARTMENT

Particulate Matter from Coatings

- Control equipment
  - HVLP or equivalent application methods
  - Paint booth filters
- Uncontrolled emission factor
  - Solid content of the material
  - Convert to pounds per throughput unit
- Throughput-based method
  - AQD Online Portal will calculate controlled emissions

Maricopa County AIR QUALITY DEPARTMENT

Particulate Matter from Coatings

Control Equipment Information

AQD ID: OTH001
Control Equipment Type: Other
AQD Description: HVLP Spray Guns

Company Control Equipment ID: HVLP
Company Control Equipment Description: HVLP Spray Guns

Operating Status: Operating
Initial Installation Date:
Manufacturer Name: **Model Name and Number:**

Control Equipment Type Specific Information

Pollutants Controlled

Explanation

*You must specify at least one pollutant in the Pollutants Controlled table

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PM Primary (includes filterables > 10 microns + condensibles)	65	65	100	65
PM10 Primary (includes filterables + condensibles)	65	65	100	65
PM2.5 Primary (includes filterables + condensibles)	65	65	100	65

Printable view | Export to excel

Control Equipment Information

AQD ID: PAF001
Control Equipment Type: Passive Filter
AQD Description: Spray Booth Filters

Company Control Equipment ID: SBF
Company Control Equipment Description: Spray Booth Filters

Operating Status: Operating
Initial Installation Date:
Manufacturer Name: **Model Name and Number:**

Control Equipment Type Specific Information

Filter Type : Paint Booth Filter
Change Frequency - specify units : Monthly
Inlet Gas Flow Rate (acfm) : 50000
Outlet Gas Flow Rate (acfm) : 50000

Pollutants Controlled

Explanation

*You must specify at least one pollutant in the Pollutants Controlled table

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PM Primary (includes filterables > 10 microns + condensibles)	98	98	100	98
PM10 Primary (includes filterables + condensibles)	98	98	100	98
PM2.5 Primary (includes filterables + condensibles)	98	98	100	98

Printable view | Export to excel

Particulate Matter from Coatings

- Emission Factor = pounds of solids per gallon

Process & Emissions Detail

PRC036: Source Classification Code (SCC) is 4-02-025-01

Material Information, Annual Average Operating Schedule & Throughput Percent

Maximum Hours Per Day: 10
Maximum Days Per Week: 5
Maximum Weeks Per Year: 50
Actual Hours: 1,400.00

Winter (Jan-Feb, Dec)%: 25
Spring (Mar-May)%: 25
Summer (Jun-Aug)%: 25
Fall (Sep-Nov)%: 25

Material	Action	Throughput	Confidential	Units
Coating	Applied	8756	☐	GALLONS
Solvent in Coating	Used		☐	TONS

Variable	Amount in Coating	Units & Meaning

The variables table is empty because there are no variables in the formula associated with the FIRE rows for this process.

Explanation

Explanation

Edit Material/Schedule/Seasons

Process Emissions

Criteria Air Pollutants/Other					Emissions Reported				
Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Fugitive Amount	Stack Amount	Total	Units	Explanation
PM Primary (includes filterables > 10 microns + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	4.7		288.072	0	288.072	POUNDS	
PM10 Primary (includes filterables + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	4.7		288.072	0	288.072	POUNDS	
PM2.5 Primary (includes filterables + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	4.7		288.072	0	288.072	POUNDS	
CO - Carbon Monoxide	Throughput-based factor	0	pending					TONS	
NOx - Nitrogen Oxides	Throughput-based factor	0	pending					TONS	

Hierarchy of Emission Calculation Methods

1. CEMS Data
2. Performance Tests
3. Material Mass Balance
4. Emissions estimates shall be calculated using emissions factors from EPA Publication No. AP-42 "Compilation of Air Pollutant Emission Factors", Volume I: Stationary Point and Area Sources.

Maricopa County AIR QUALITY DEPARTMENT

AP-42 Emission Factors

- Method: **Throughput-based factor**
- Verify emission factors that are prepopulated in the AQD Online Portal

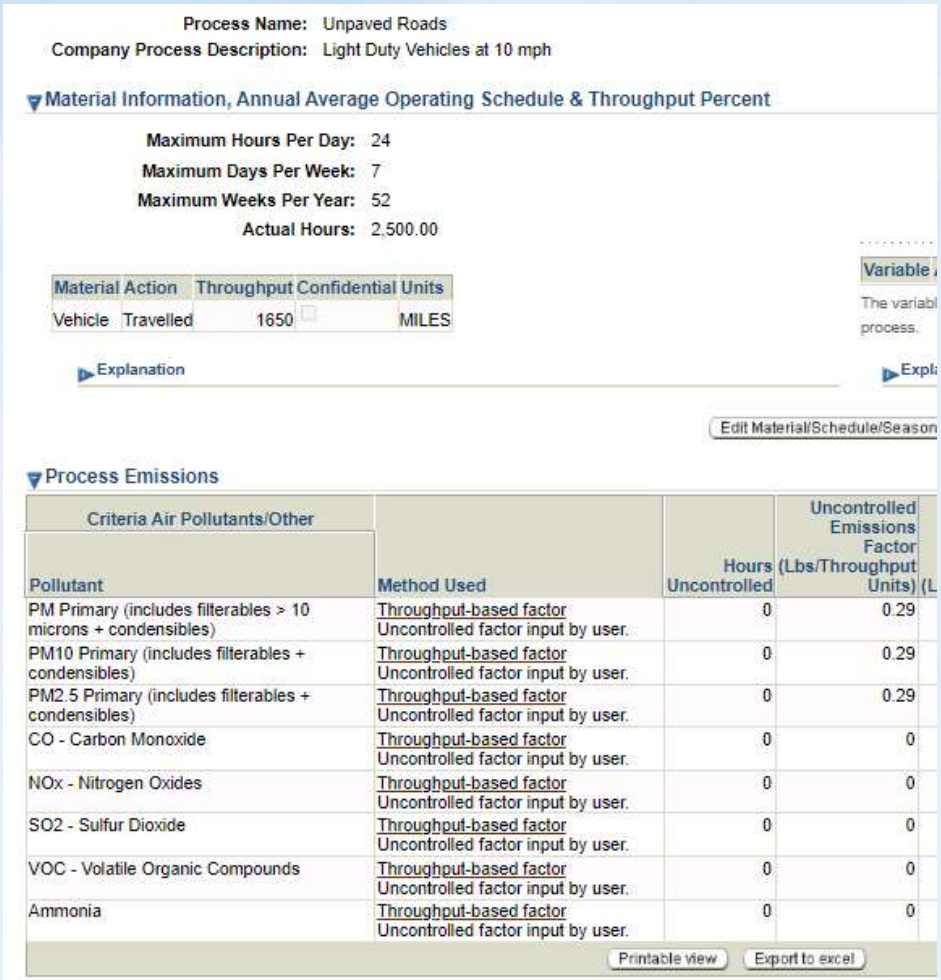
Resources

- maricopa.gov/5628
  - Process specific help sheets
  - 2021 SCC Codes and Emission Factors
- Permit technical support document
  - maricopa.gov/5073
- AP-42

Maricopa County AIR QUALITY DEPARTMENT

Throughput-based Factors

- Use uncontrolled emission factors
- Enter capture and control efficiency



Process Name: Unpaved Roads
Company Process Description: Light Duty Vehicles at 10 mph

Material Information, Annual Average Operating Schedule & Throughput Percent

Maximum Hours Per Day: 24
Maximum Days Per Week: 7
Maximum Weeks Per Year: 52
Actual Hours: 2,500.00

Material	Action	Throughput	Confidential	Units
Vehicle	Travelled	1650		MILES

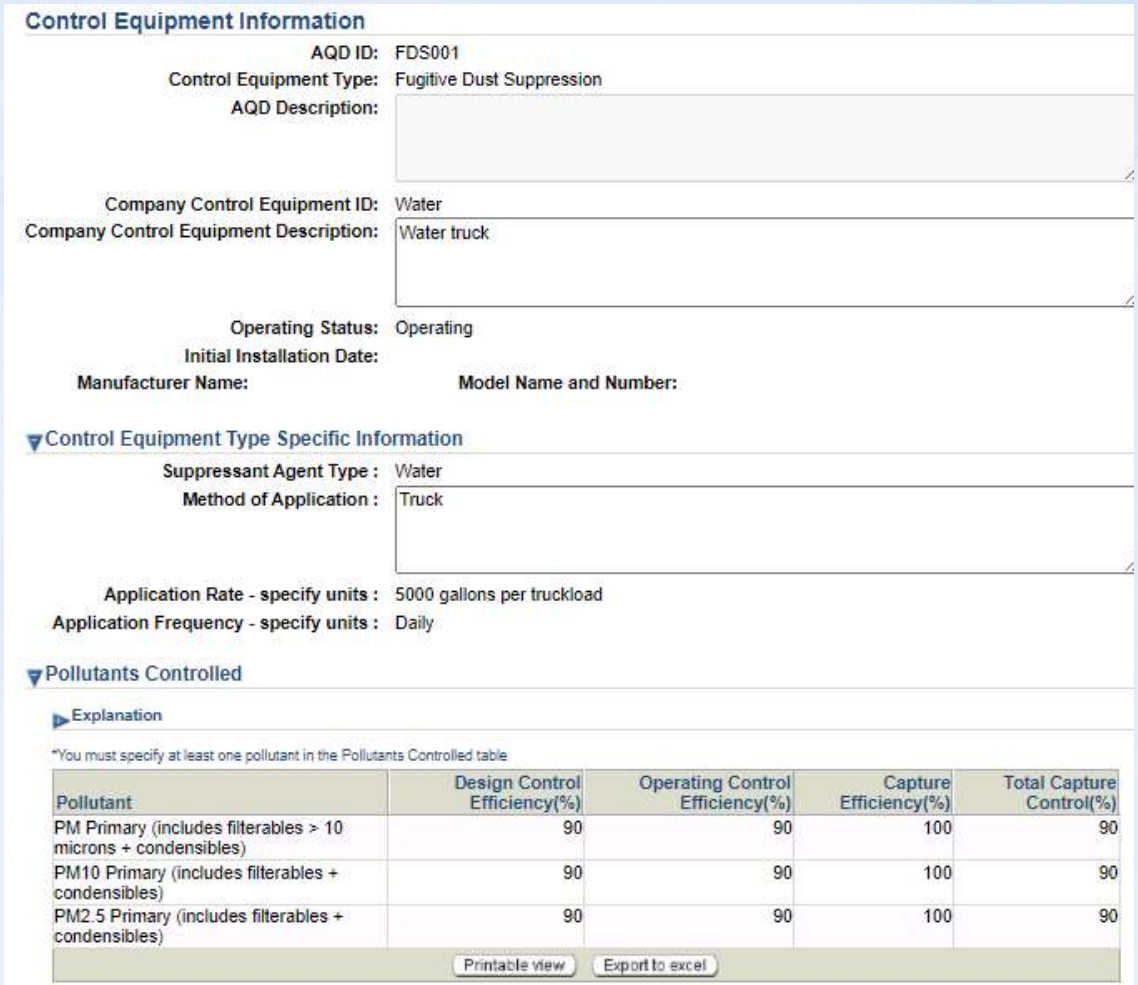
Explanation

Edit Material/Schedule/Season

Process Emissions

Criteria Air Pollutants/Other Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)
PM Primary (includes filterables > 10 microns + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	0.29
PM10 Primary (includes filterables + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	0.29
PM2.5 Primary (includes filterables + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	0.29
CO - Carbon Monoxide	Throughput-based factor Uncontrolled factor input by user.	0	0
NOx - Nitrogen Oxides	Throughput-based factor Uncontrolled factor input by user.	0	0
SO2 - Sulfur Dioxide	Throughput-based factor Uncontrolled factor input by user.	0	0
VOC - Volatile Organic Compounds	Throughput-based factor Uncontrolled factor input by user.	0	0
Ammonia	Throughput-based factor Uncontrolled factor input by user.	0	0

Printable view | Export to excel



Control Equipment Information

AQD ID: FDS001
Control Equipment Type: Fugitive Dust Suppression
AQD Description:
Company Control Equipment ID: Water
Company Control Equipment Description: Water truck
Operating Status: Operating
Initial Installation Date:
Manufacturer Name: **Model Name and Number:**

Control Equipment Type Specific Information

Suppressant Agent Type : Water
Method of Application : Truck
Application Rate - specify units : 5000 gallons per truckload
Application Frequency - specify units : Daily

Pollutants Controlled

Explanation

*You must specify at least one pollutant in the Pollutants Controlled table

Pollutant	Design Control Efficiency(%)	Operating Control Efficiency(%)	Capture Efficiency(%)	Total Capture Control(%)
PM Primary (includes filterables > 10 microns + condensibles)	90	90	100	90
PM10 Primary (includes filterables + condensibles)	90	90	100	90
PM2.5 Primary (includes filterables + condensibles)	90	90	100	90

Printable view | Export to excel

Throughput-based Factors

AQD Online Portal will calculate controlled emissions

Material	Action	Throughput	Confidential	Units
Vehicle	Travelled	1650	☐	MILES

Explanation

Variable Amount in Vehicle Units & Meaning

The variables table is empty because there are no variables in the formula associate process.

Explanation

Edit Material/Schedule/Seasons

Process Emissions

Criteria Air Pollutants/Other					Emissions Reported				
Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Fugitive Amount	Stack Amount	Total	Units	Exp
PM Primary (includes filterables > 10 microns + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	0.29		0.023925	0	0.023925	TONS	
PM10 Primary (includes filterables + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	0.29		0.023925	0	0.023925	TONS	
PM2.5 Primary (includes filterables + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	0.29		0.023925	0	0.023925	TONS	
CO - Carbon Monoxide	Throughput-based factor Uncontrolled factor input by user.	0	0		0	0	0	TONS	
NOx - Nitrogen Oxides	Throughput-based factor Uncontrolled factor input by user.	0	0		0	0	0	TONS	
SO2 - Sulfur Dioxide	Throughput-based factor Uncontrolled factor input by user.	0	0		0	0	0	TONS	
VOC - Volatile Organic Compounds	Throughput-based factor Uncontrolled factor input by user.	0	0		0	0	0	TONS	
Ammonia	Throughput-based factor Uncontrolled factor input by user.	0	0		0	0	0	TONS	

Emission Factor Units

Material	Action	Throughput	Confidential	Units
Natural Gas	Burned	3.8	☐	MILLION CUBIC FEET

Variable	Amount in Natu
HCg	

Explanation

Explanation

Process Emissions

Criteria Air Pollutants/Other Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)
PM Primary (includes filterables > 10 microns + condensibles)	Throughput-based factor	0	7.6	
PM10 Primary (includes filterables + condensibles)	Throughput-based factor	0	7.6	
PM2.5 Primary (includes filterables + condensibles)	Throughput-based factor	0	7.6	
CO - Carbon Monoxide	Throughput-based factor	0	84	
NOx - Nitrogen Oxides	Time-based factor - Stack Test	0	50	0.04
SO2 - Sulfur Dioxide	Throughput-based factor	0	0.6	
VOC - Volatile Organic Compounds	Throughput-based factor	0	5.5	
Ammonia	Throughput-based factor	0	0.49	

Printable view Export to excel

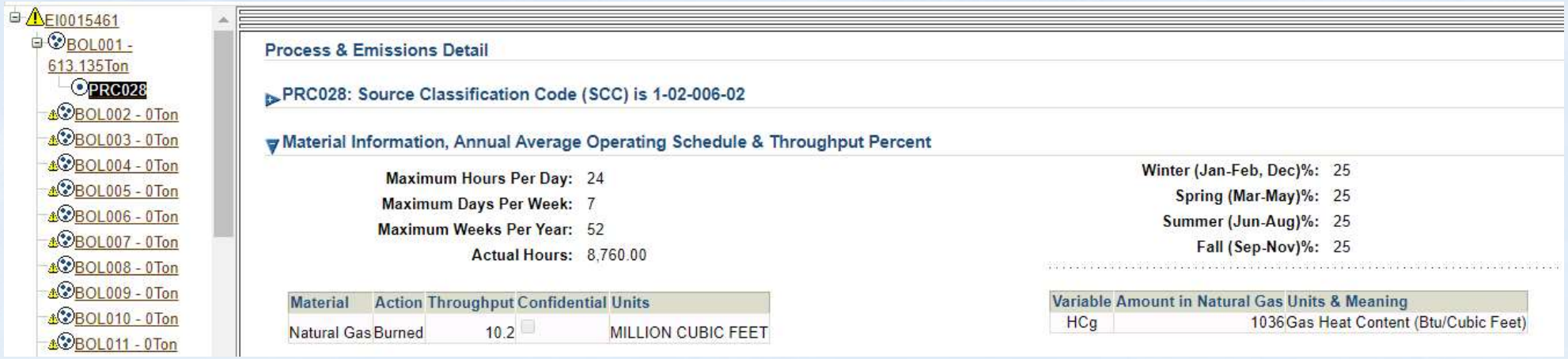
Engines

Throughput Options	
Fuel Usage • 1,000 gallons (diesel fuel) • MM cf (natural gas or propane)	Horsepower-Hours (hp-hr)

Emission Factors Options	
Throughput based • lb/1,000 gallons (diesel fuel) • lb/MM cf (natural gas or propane) Time based • lb/hour • Different emission factors for each engine	Throughput based • lb/hp-hr • Different emission factors for each engine class Time based • lb/hour • Different emission factors for each engine

Example 1 - Boilers

- Report emissions under the largest boiler
  - In this case, BOL001
- Enter total throughput (natural gas) used by all boilers in the group



Example 1 - Boilers

- Enter emission factors – some may prepopulate
- Click “Save” to calculate emissions

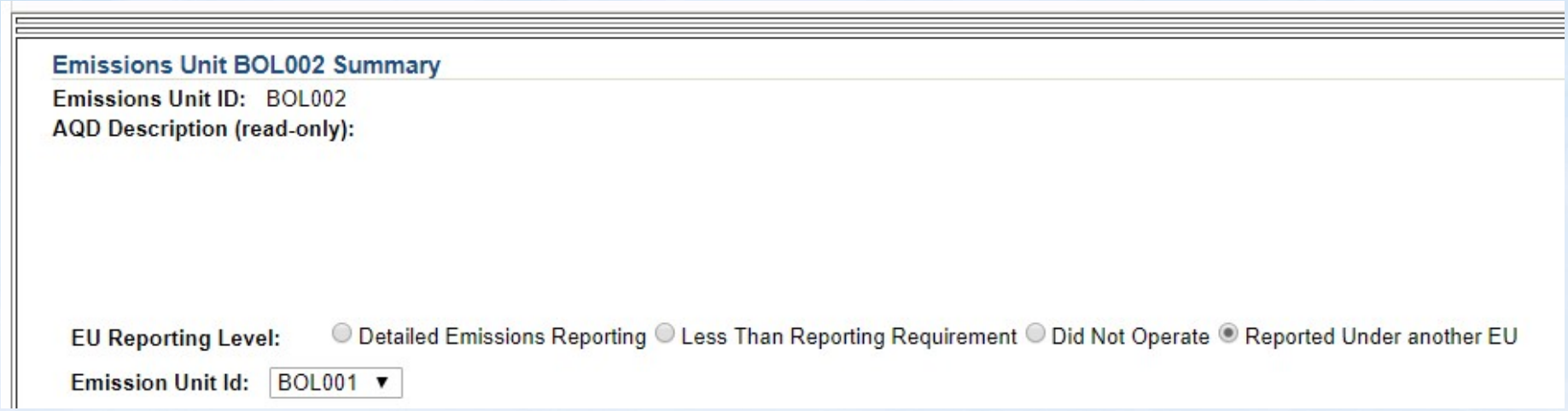
Process Emissions

Criteria Air Pollutants/Other					Emissions Reported				
Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Fugitive Amount	Stack Amount	Total	Units	Explanation
PM Primary (includes filterables > 10 microns + condensibles)	Throughput-based factor Available factors: 1	0	7.6		0.03876	0	0.03876	TONS	
PM10 Primary (includes filterables + condensibles)	Throughput-based factor Available factors: 1	0	7.6		0.03876	0	0.03876	TONS	
PM2.5 Primary (includes filterables + condensibles)	Throughput-based factor Available factors: 1	0	7.6		0.03876	0	0.03876	TONS	
CO - Carbon Monoxide	Throughput-based factor Available factors: 1	0	84		0.4284	0	0.4284	TONS	
NOx - Nitrogen Oxides	Throughput-based factor Available factors: 1	0	100		0.51	0	0.51	TONS	
SO2 - Sulfur Dioxide	Throughput-based factor Available factors: 1	0	0.6		0.00306	0	0.00306	TONS	
VOC - Volatile Organic Compounds	Throughput-based factor Uncontrolled factor input by user. Available factors: 2	0	5.5		0.02805	0	0.02805	TONS	
Ammonia	Throughput-based factor Available factors: 1	0	3.2		0.01632	0	0.01632	TONS	

Printable view Export to excel

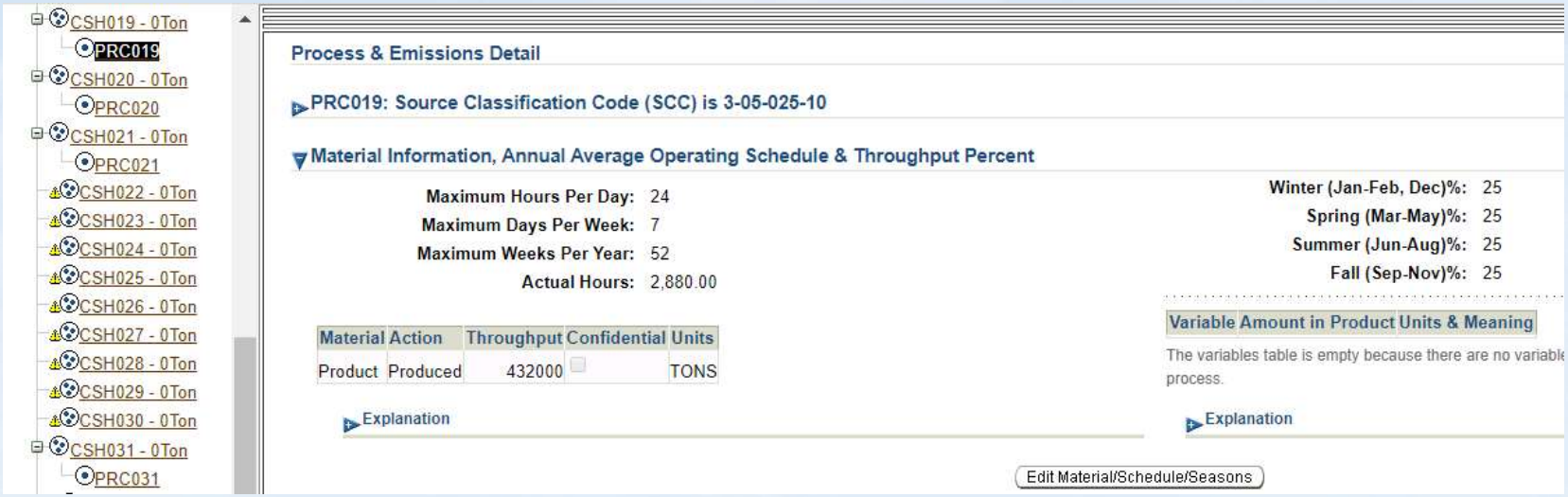
Example 1 - Boilers

Mark other boiler emission units as Reported Under BOL001



Example 2 - Crushers

- Choose 1 crusher to report emissions under
- Enter total throughput to all three crushers
  - If 144,000 tons went through each crusher report 432,000 tons



Example 2 - Crushers

- Enter emissions
- Click “Save” to calculate emissions

Process Emissions

Criteria Air Pollutants/Other					Emissions Reported				
Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Fugitive Amount	Stack Amount	Total	Units	Explanation
PM Primary (includes filterables > 10 microns + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	0.0054		1.1664	0	1.1664	TONS	
PM10 Primary (includes filterables + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	0.0024		0.5184	0	0.5184	TONS	
PM2.5 Primary (includes filterables + condensibles)	Throughput-based factor Uncontrolled factor input by user.	0	0.0024		0.5184	0	0.5184	TONS	
CO - Carbon Monoxide	Throughput-based factor Uncontrolled factor input by user.	0	0		0	0	0	TONS	
NOx - Nitrogen Oxides	Throughput-based factor Uncontrolled factor input by user.	0	0		0	0	0	TONS	
SO2 - Sulfur Dioxide	Throughput-based factor Uncontrolled factor input by user.	0	0		0	0	0	TONS	
VOC - Volatile Organic Compounds	Throughput-based factor Uncontrolled factor input by user.	0	0		0	0	0	TONS	
Ammonia	Throughput-based factor Uncontrolled factor input by user.	0	0		0	0	0	TONS	

Printable view | Export to excel

Maricopa County AIR QUALITY DEPARTMENT

Example 2 - Crushers

- Mark other crusher emission units as Reported Under CSH019

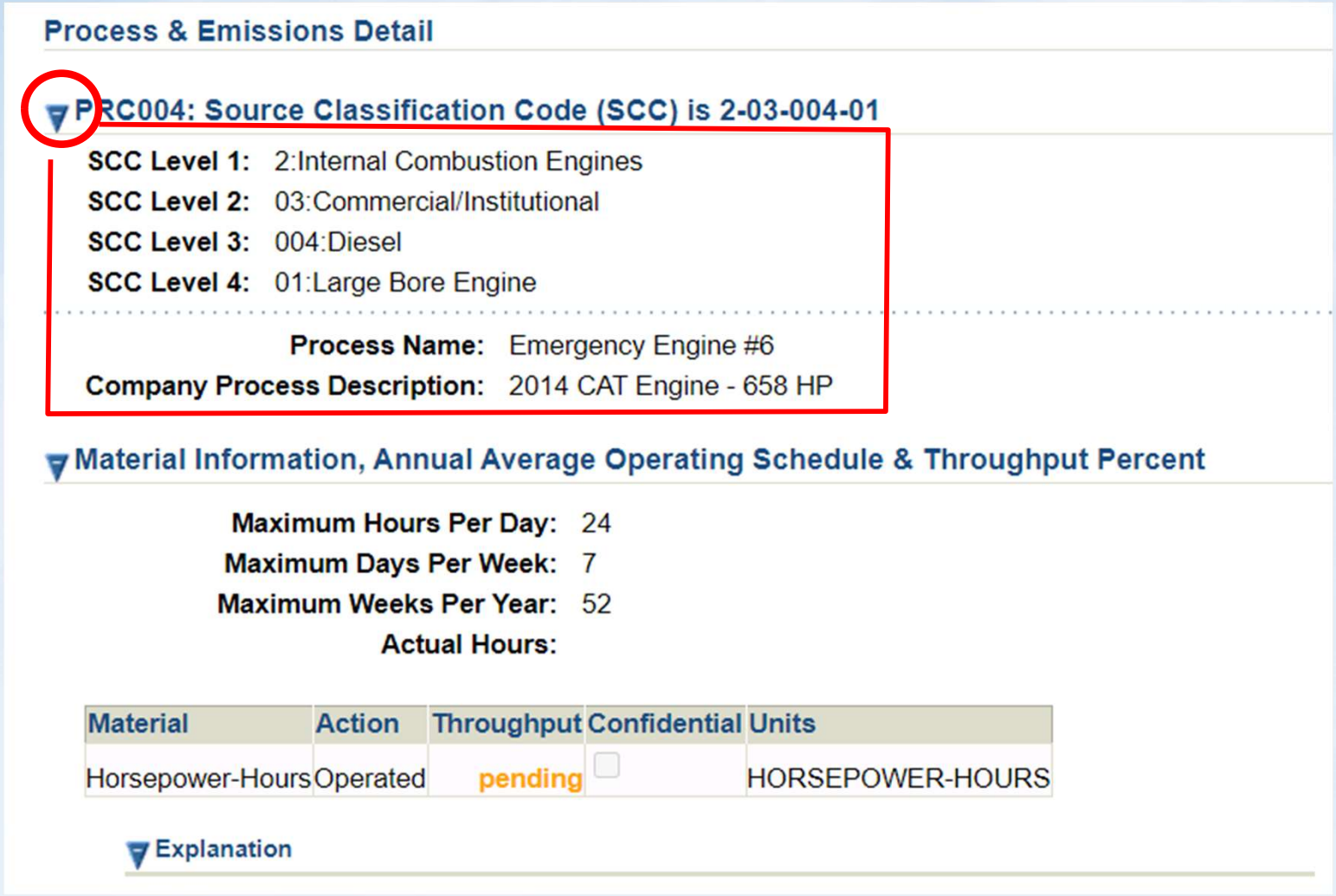
Hierarchy of Emission Calculation Methods

1. CEMS Data
2. Performance Tests
3. Material Mass Balance
4. AP-42 Emission Factors
5. Emissions estimates should be calculated by equivalent methods supported by back-up documentation that will substantiate the chosen method.

Maricopa County AIR QUALITY DEPARTMENT

Helpful Hints

Click the triangles to see additional details.



Maricopa County AIR QUALITY DEPARTMENT

Helpful Hints

If the emission totals don't make sense, check how emissions were calculated.

Process Emissions

Criteria Air Pollutants/Other					Emissions Reported				
Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Fugitive Amount	Stack Amount	Total	Units	Explanation
PM Primary (includes filterables > 10 microns + condensibles)	Throughput-based factor Available factors: 1	8760	7.6		1.235	0	1.235	TONS	
PM10 Primary (includes filterables + condensibles)	Throughput-based factor Available factors: 1	8760	7.6		1.235	0	1.235	TONS	
PM2.5 Primary (includes filterables + condensibles)	Throughput-based factor Available factors: 1	8760	7.6		1.235	0	1.235	TONS	
CO - Carbon Monoxide	Throughput-based factor Available factors: 1	8760	84		13.65	0	13.65	TONS	
NOx - Nitrogen Oxides	Throughput-based factor Available factors: 1	8760	100		16.25	0	16.25	TONS	
SO2 - Sulfur Dioxide	Throughput-based factor Available factors: 1	8760	0.6		0.0975	0	0.0975	TONS	
VOC - Volatile Organic Compounds	Throughput-based factor Uncontrolled factor input by user. Available factors: 2	8760	5.5		0.89375	0	0.89375	TONS	
Ammonia	Throughput-based factor Available factors: 1	8760	3.2		0.52	0	0.52	TONS	

Printable view | Export to excel

Maricopa County AIR QUALITY DEPARTMENT

Helpful Hints

Pollutant: PM Primary (includes filterables > 10 microns + condensibles)

- Recommended Methods
- Methods Explained
- Factor(s)
- Calculation of Emissions
  - Explanation - Totals
  - Explanation - Heading Variables and Table Columns

Selected Calculation Method: Throughput-based factor

Pollutant: PM Primary (includes filterables > 10 microns + condensibles)

Actual Hours: 8,760

Throughput: 325

Uncontrolled Emissions Factor (Lbs/Throughput Units): 7.6

Based upon 1,000 units of emission

Stream Label	Flow %	Input	Type	Device ID	Hours Uncontrolled	Pollutant Control Used	Control Efficiency %	Capture Efficiency %	Uncaptured Fugitive Emissions Included in Total Fugitive Units	Uncaptured Fugitive Emissions Included in Total Fugitive TONS	Captured: Uncontrolled Emissions Output Units	Captured: Uncontrolled Emissions Included in Total Fugitive Units	Captured: Uncontrolled Emissions Included in Total Fugitive TONS	Captured: Uncontrolled Emissions Included in Total Stack Units	Captured: Uncontrolled Emissions Included in Total Stack TONS	Captured: Capture Controlled Emissions Output Units	Captured: Capture Controlled Emissions Included in Total for Throughput-based Only Fugitive Units	Captured: Capture Controlled Emissions Included in Total for Throughput-based Only Fugitive TONS	Captured: Capture Controlled Emissions Included in Total for Throughput-based Only Stack Units	Captured: Capture Controlled Emissions Included in Total for Throughput-based Only Stack TONS	Total Output
0		1,000						0.0	1,000	1.235	0					0					0

Printable view | Export to excel

Fugitive Total TONS: 1.235 Stack Total TONS: 0

Maricopa County AIR QUALITY DEPARTMENT

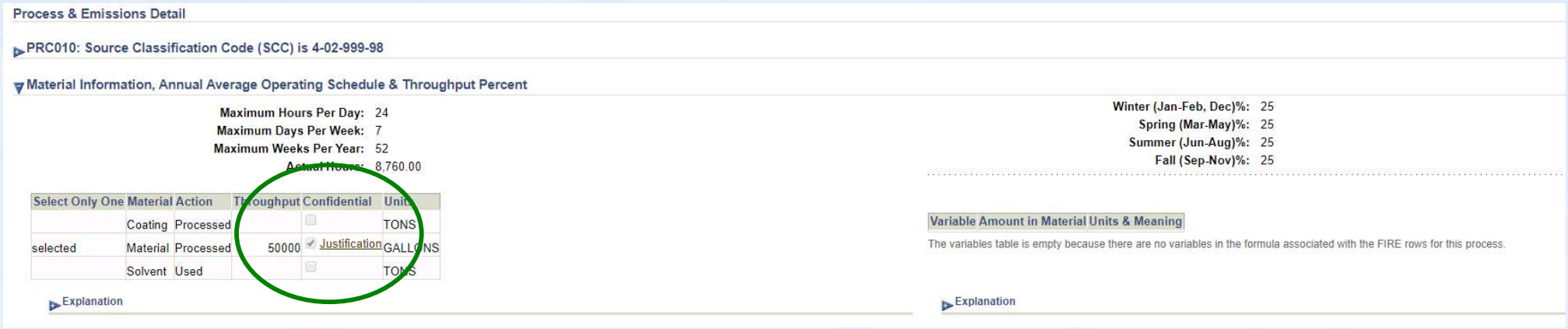
Confidential Data

- Information submitted in annual emissions reports must be made available to the public … unless a person
  - Precisely identifies the information which is considered confidential, and
  - Provides sufficient documentation allowing the Control Officer to determine if the information is a trade secret.
- Trade secret means
  - Reasonable measures have been taken to prevent disclosure
  - The information is not reasonable obtainable without consent
  - No statute requires disclosure of the information to the public
  - The person has shown that disclosure is likely to cause substantial harm to the business's competitive position.

Maricopa County AIR QUALITY DEPARTMENT

Confidential Data

- To identify data as confidential, select confidential (next to throughput) and add a justification
- Only the throughput is confidential - do not enter any other confidential data



Process & Emissions Detail

PRC010: Source Classification Code (SCC) is 4-02-999-98

Material Information, Annual Average Operating Schedule & Throughput Percent

Maximum Hours Per Day: 24
Maximum Days Per Week: 7
Maximum Weeks Per Year: 52
Actual Hours: 8,760.00

Select Only One	Material	Action	Throughput	Confidential	Units
	Coating	Processed			TONS
selected	Material	Processed	50000	Justification	GALLONS
	Solvent	Used			TONS

Explanation

Winter (Jan-Feb, Dec)%: 25
Spring (Mar-May)%: 25
Summer (Jun-Aug)%: 25
Fall (Sep-Nov)%: 25

Variable Amount in Material Units & Meaning

The variables table is empty because there are no variables in the formula associated with the FIRE rows for this process.

Explanation

Maricopa County AIR QUALITY DEPARTMENT

Confidential Data

- Delete any prepopulated emission factors
- Select “Emissions” method
- Enter fugitive and stack emissions

Criteria Air Pollutants/Other Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Emissions Reported Fugitive Amount	Stack Amount	Total	Units	Explanation
PM Primary (includes filterables > 10 microns + condensibles)	Emissions				0	0		TONS	add
PM10 Primary (includes filterables + condensibles)	Emissions				0	0		TONS	add
PM2.5 Primary (includes filterables + condensibles)	Emissions				0	0		TONS	add
CO - Carbon Monoxide	Emissions				0	0		TONS	add
NOx - Nitrogen Oxides	Emissions				0	0		TONS	add
SO2 - Sulfur Dioxide	Emissions				0	0		TONS	add
VOC - Volatile Organic Compounds	Emissions				0	67.5		TONS	trade secret
Ammonia	Emissions				0	0		TONS	add

Printable view | Export to excel

The following information was developed using {Arizona} DEQ-generated pollutant emission calculations. The values may be provided to USEPA by the {Arizona} DEQ. You may modify these {Arizona} DEQ-generated emission calculations if you have more accurate information.

Select	Hazardous Air Pollutants/Greenhouse Gases/Other Pollutant	Method Used	Hours Uncontrolled	Uncontrolled Emissions Factor (Lbs/Throughput Units)	Time-based Factor (LBS/Hour)	Emissions Reported Fugitive Amount	Stack Amount	Total	Units	Explanation
☐	Toluene	Emissions					67.5		TONS	trade secret

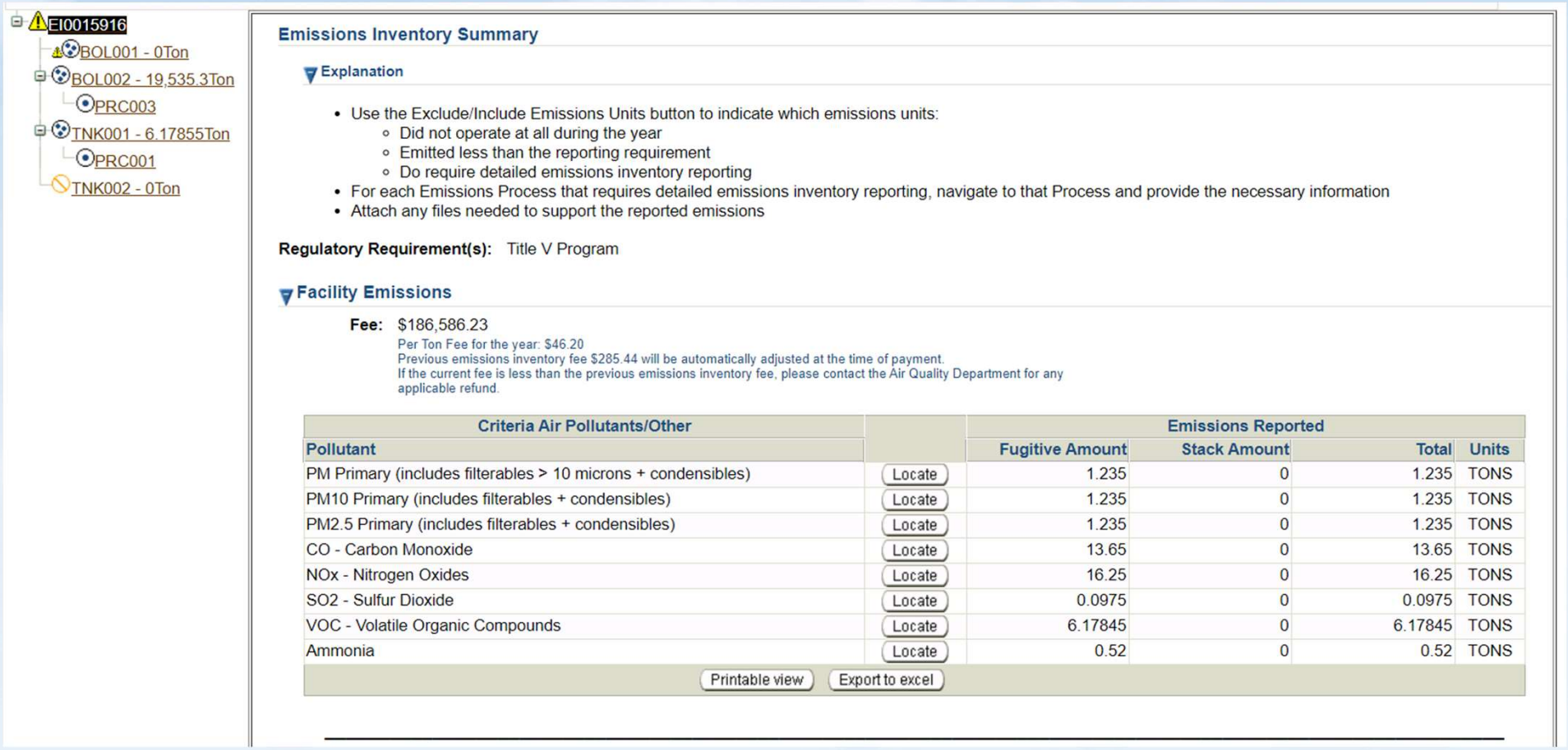
Add Emission | Delete Selected Emission(s) | Printable view | Export to excel

Confidential Data

- Upload two emission calculation documents
  - Trade Secret (contains confidential data)
  - Public Document (confidential data must be removed)
- Upload a letter
  - Justify that confidential data is a trade secret (as defined in A.R.S.)

Maricopa County AIR QUALITY DEPARTMENT

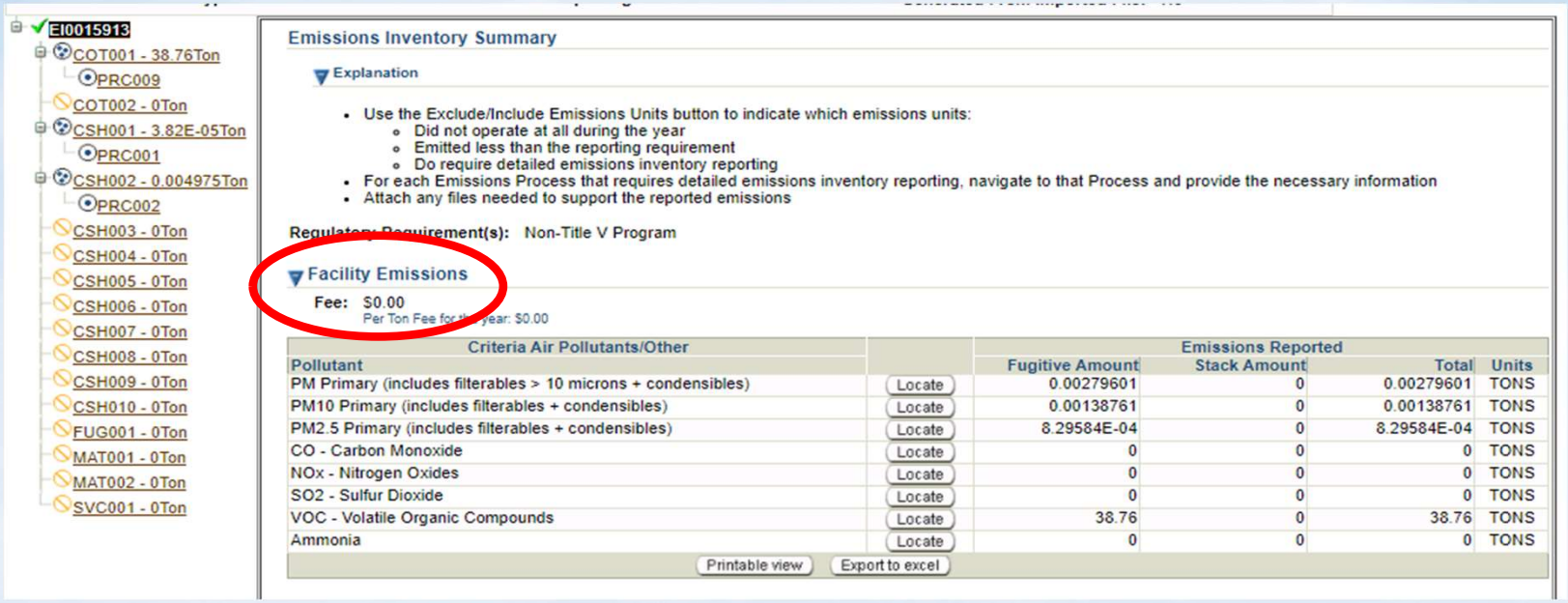
Review Emission Totals

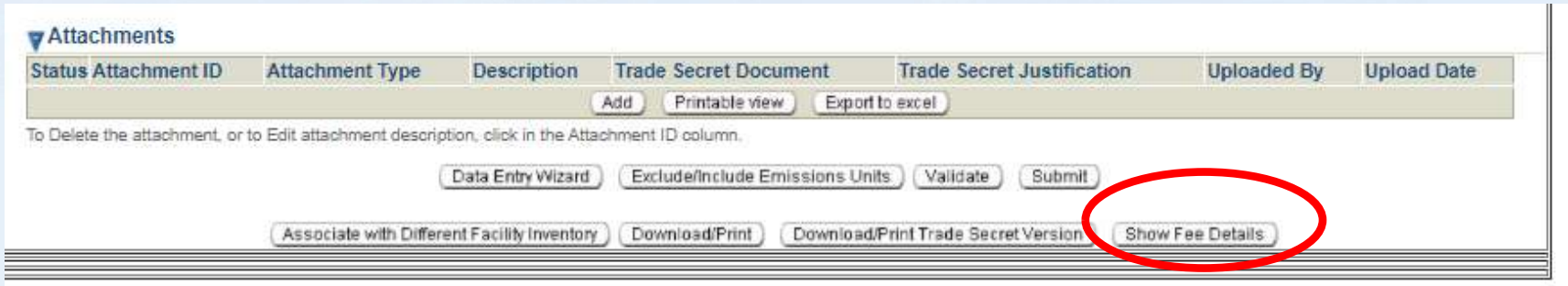


Maricopa County AIR QUALITY DEPARTMENT

Title V Fees

- Emissions-based fee - $47.50/ton

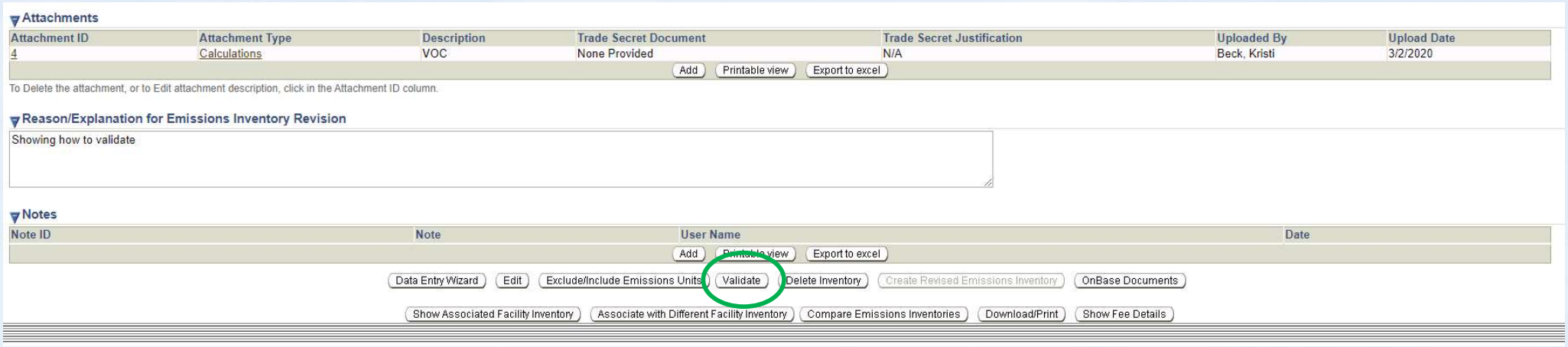




Maricopa County AIR QUALITY DEPARTMENT

Final Steps

- Add notes
- Attach calculation spreadsheets, trade secret documents, public documents, and supporting information
- Validate



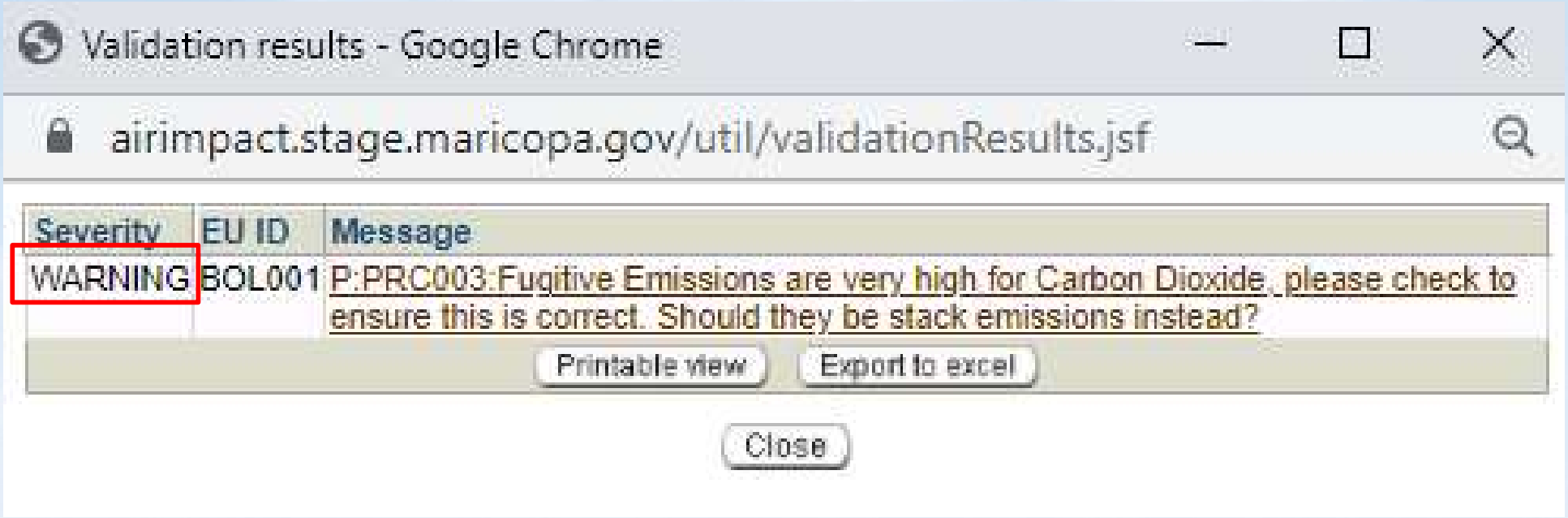
Correct Errors

Click message to go to error location

Severity	EU ID	Message
ERROR	ABS001	P:PRC001:Emissions values missing for PM10 Primary (includes filterables + condensibles)
ERROR	ABS001	P:PRC001:Emissions values missing for CO - Carbon Monoxide
ERROR	ABS001	Attribute: P:PRC001:Schedule: Actual Hours is not set.
ERROR	ABS001	P:PRC001:No Material Selected
ERROR	ABS001	P:PRC001:Emissions values missing for SO2 - Sulfur Dioxide
ERROR	ABS001	P:PRC001:Emissions values missing for PM2.5 Primary (includes filterables + condensibles)
ERROR	ABS001	P:PRC001:Emissions values missing for NOx - Nitrogen Oxides
ERROR	ABS001	P:PRC001:Emissions values missing for PM Primary (includes filterables > 10 microns + condensibles)
ERROR	ABS001	P:PRC001:Emissions values missing for VOC - Volatile Organic Compounds
ERROR	ABS001	P:PRC001:Emissions values missing for Ammonia

Maricopa County AIR QUALITY DEPARTMENT

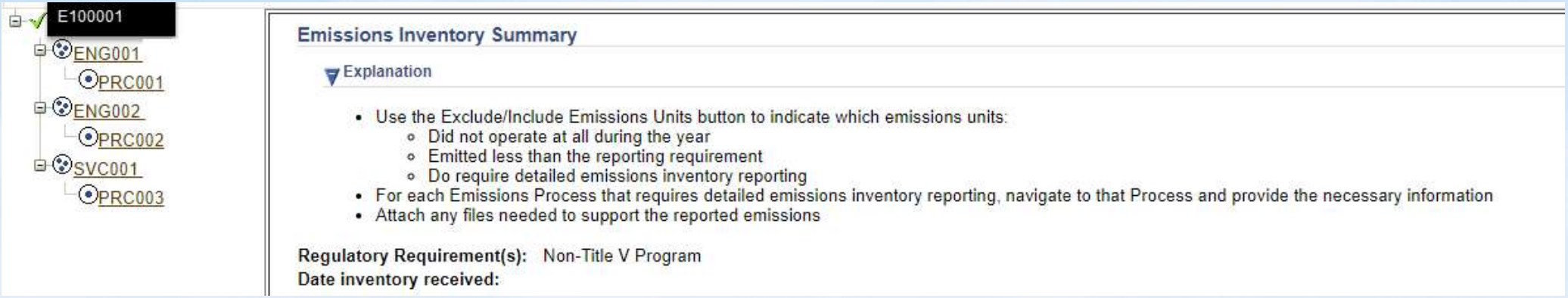
Ignore Warnings



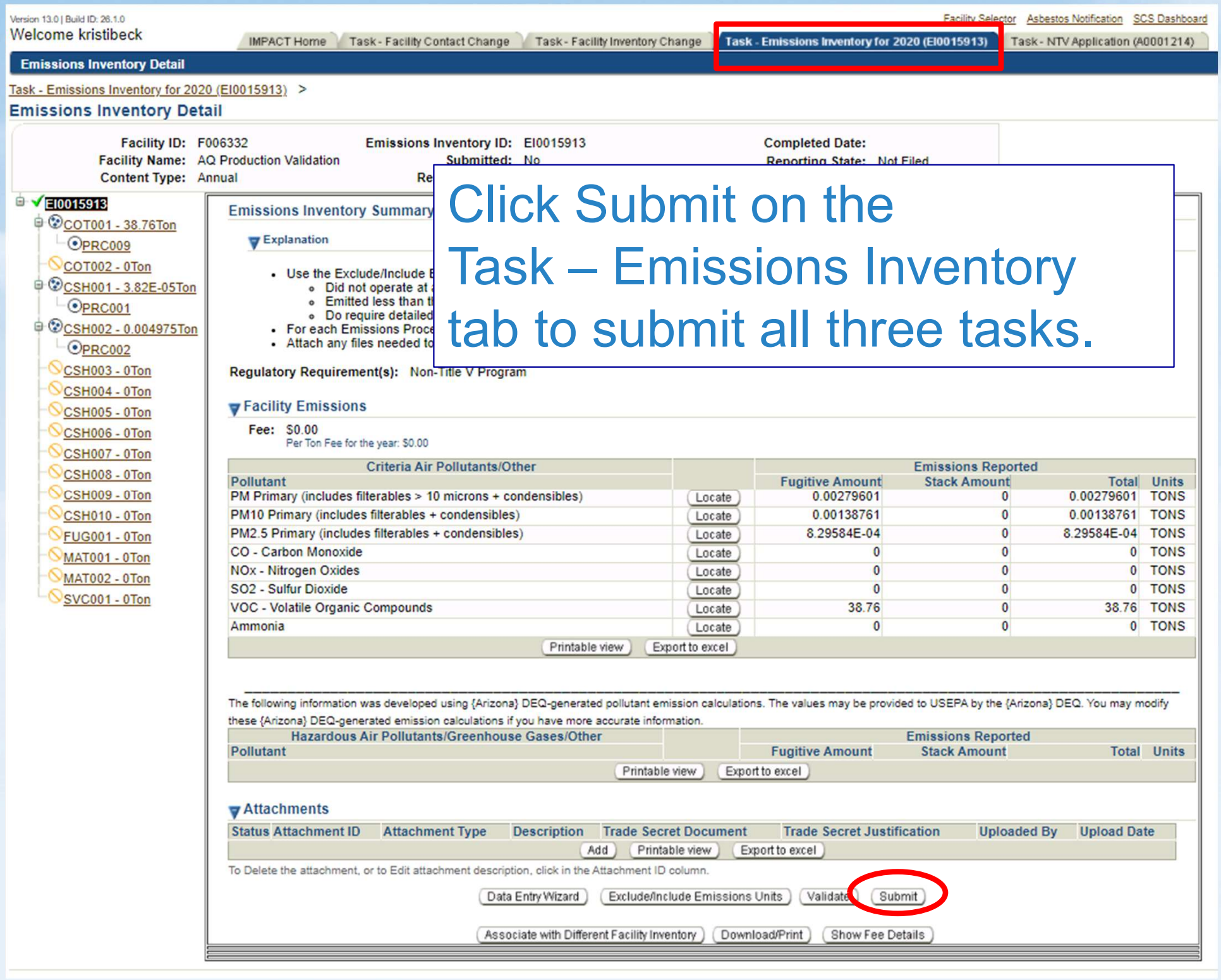
Maricopa County AIR QUALITY DEPARTMENT

Validated

Green ✓ - ready to submit



Maricopa County AIR QUALITY DEPARTMENT



Click Submit on the Task – Emissions Inventory tab to submit all three tasks.

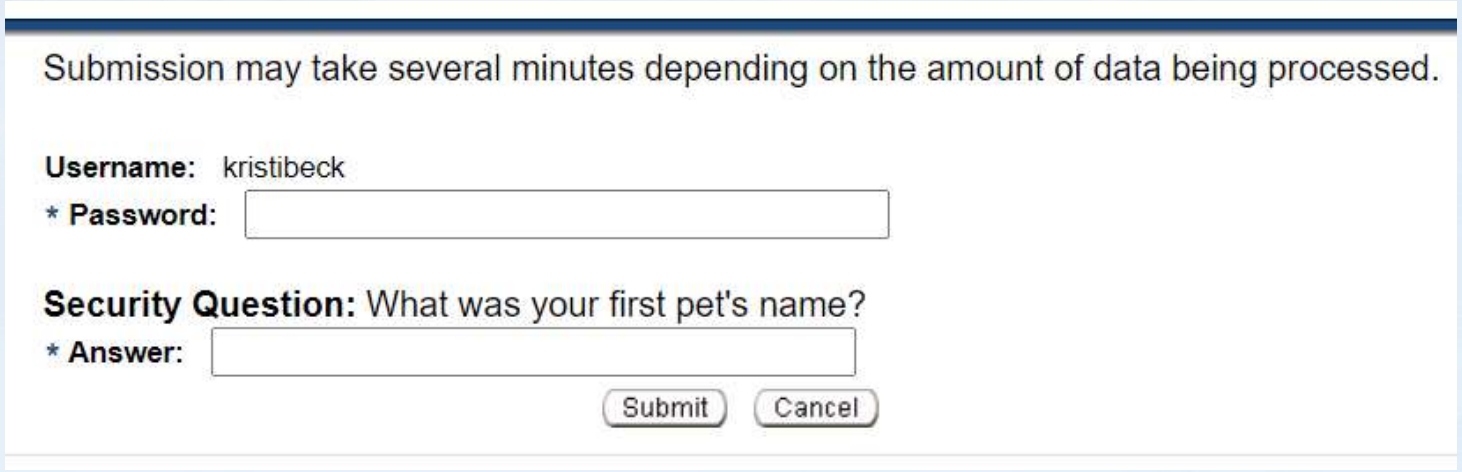
Electronic Signature

- Title V emissions inventories must be submitted by a responsible official.
  - Corporation
    - President, secretary (corporate), treasurer, or vice-president
    - Any other person who performs similar policy or decision-making functions for the corporation
    - A duly authorized representative approved in advance by the MCAQD
  - A general partner or the sole proprietor
- Non-Title V emissions inventories can be submitted by any authorized representative (not a consultant).

Maricopa County AIR QUALITY DEPARTMENT

Electronic Signature

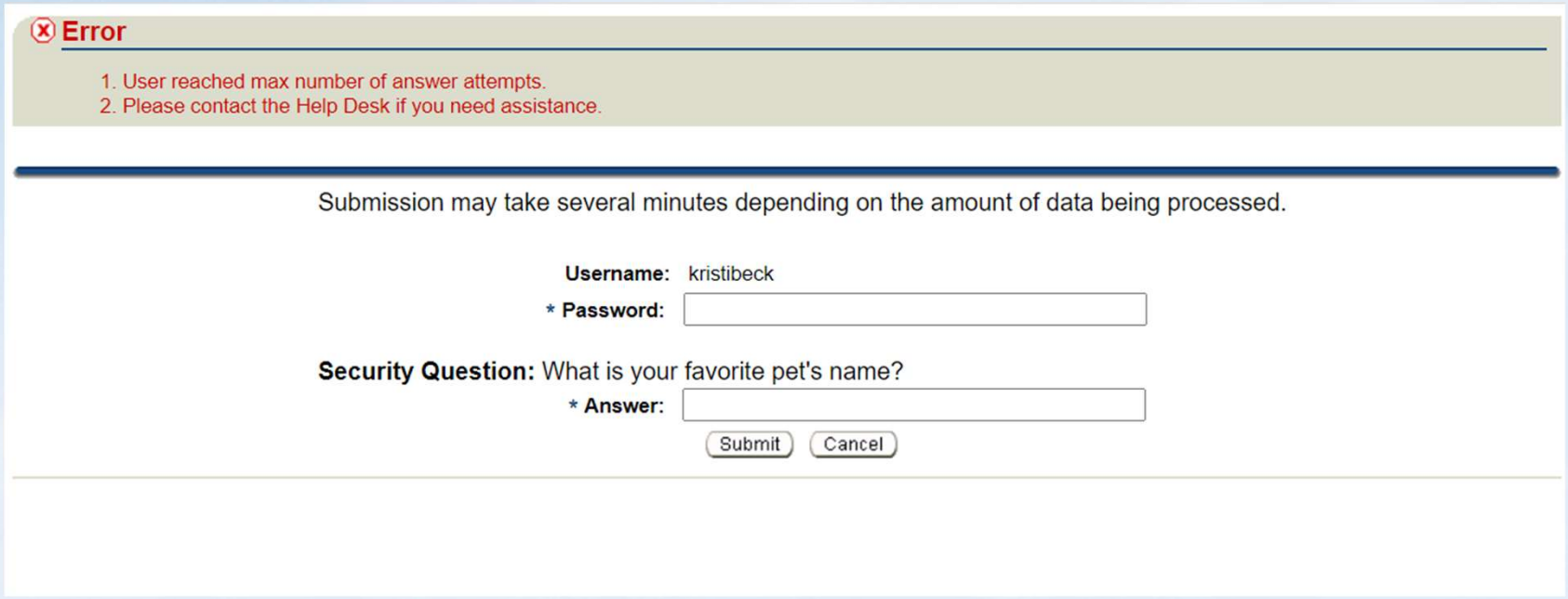
- Password + Security Question
  - Do not share these credentials
- Be sure to enter credentials correctly
  - You will be locked out after two failed attempts



Maricopa County AIR QUALITY DEPARTMENT

Reset Signature Questions

Maricopa.gov/1820



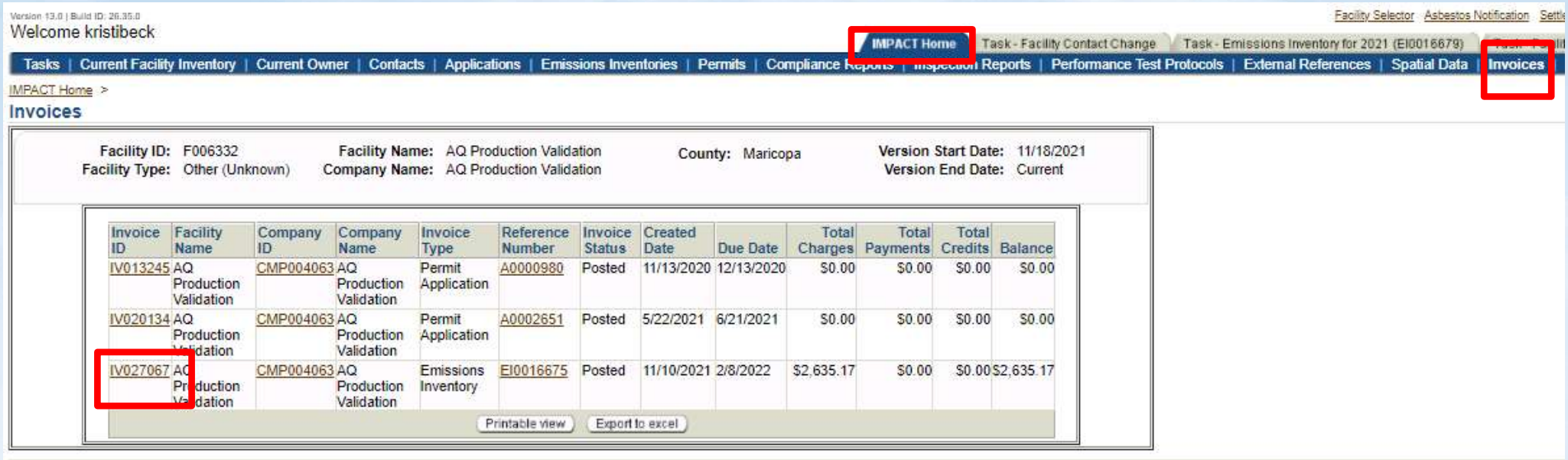
Troubleshooting SCS

- Adding a New Role to an Existing Organization in SCS
- Resetting SCS Account Security Questions

Maricopa County AIR QUALITY DEPARTMENT

Title V Fees

- Invoice is generated when inventory is submitted



- Pay online
  - Credit card
  - E-check
- Late fee is added for late payments

Maricopa County AIR QUALITY DEPARTMENT

Emissions Inventory Review

- Compare EI to the permit and the technical support document
  - Completeness
    - Processes
    - Pollutants
  - Accuracy
    - Emission factors
    - Capture and control efficiency
  - Are emissions within permitted limits?
- Electronic signature

Maricopa County AIR QUALITY DEPARTMENT

EI Assistance

- Email
  - EmissionsInventory@maricopa.gov
- Phone
  - (602) 506-6790
- Book an online consultation
  - Maricopa.gov/5628

  - Create an SCS Electronic Signature and gather all operational records prior to the meeting

Maricopa County AIR QUALITY DEPARTMENT

Questions

Maricopa County
AIR QUALITY
DEPARTMENT

Thank you.

EmissionsInventory@maricopa.gov
(602) 506-6790

Maricopa County
AIR QUALITY
DEPARTMENT